

American Bee Journal



JUNE, 1961

VOL. 91, NO. 5

This Is the Year for Comb Honey

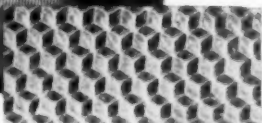
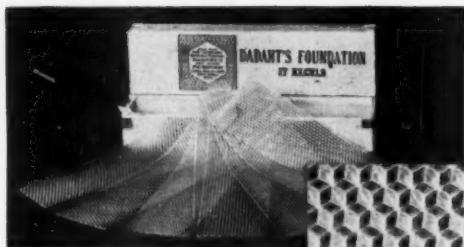
Section Comb Honey Cut-Comb Honey

Comb honey, both section and bulk comb, has become so scarce that people now actually "pine for that good, old-fashioned comb honey" they used to buy. This is the year to swing into the production of cut-comb honey and section comb honey. Get ready for a ready market.

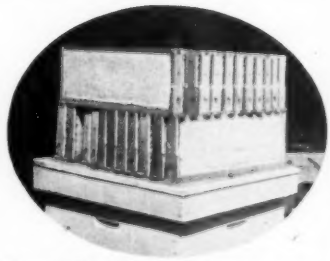
Dadant's Thin Surplus for your sections and Dadant's Fancy Bulk or Cut-Comb Foundation will start you right into quality. If you use skill and have the kind of flow that makes good comb honey, you too can get the high-grade product that Carl Killion shows in these pictures. He is the world's premier comb honey producer and always uses Dadant's Thin Surplus in all his supers.

If you haven't tried Dadant's Gilt Edge Foundation for your brood and extracting combs (Gilt-4- Edge for the Lewis Nailless Topbar Frame; and Gilt-3-Edge for split or slotted bottombar frames with topbar wedge) you have a surprise in store. The fastest assembly known and such good combs! Send 25c for a sample frame with foundation.

DADANT & SONS, Inc.
HAMILTON, ILLINOIS



you want Comb Honey
t's Thin
MADE OF PURE
READILY AC



Lewis-Dadant Branches and
Dealers Are Everywhere

**Bee smart—
use clean, bright, tight
Continental Honey Cans!**



CONTACT THE NEAREST DISTRIBUTOR

PHOENIX, ARIZONA Quick Seed & Feed Co. Superior Honey Co.	MONTE VISTA, COLO. John Haefeli	WINONA, MINN. Robb Bros.
ALAMEDA, CALIF. Boyden-Hansen Co.	WENDELL, IDAHO R. D. Bradshaw & Sons	MANHATTAN, MONT. Cloverdale Apiaries
ALHAMBRA, CALIF. B-Z-B Honey Co.	CHICAGO, ILL. The A. I. Root Company	ALBANY, NEW YORK G. B. Lewis Company
COLTON, CALIF. Sioux Honey Assoc.	HAMILTON, ILL. Dadant & Sons	GROTON, NEW YORK Finger Lakes Honey Prod. Coop. Inc.
LOS ANGELES, CALIF. Bryant & Sawyer Diamond Match Co. Hamilton & Co. Superior Honey Co.	COUNCIL BLUFFS, IOWA The A. I. Root Company	SYRACUSE, NEW YORK The A. I. Root Company
SAN DIEGO, CALIF. George B. Wright	MCGREGOR, IOWA John Harnack & Sons	FARGO, N. D. Magill & Co.
SAN FRANCISCO, CALIF. General Can Co.	SIoux CITY, IOWA Sioux Honey Assn. G. B. Lewis Company	TOLEDO, OHIO Alexander Company
DELTA, COLO. Grover E. Turner	PADUCAH, KENTUCKY The Walter T. Kelley Co.	PARIS, TEXAS Dadant & Sons, Inc.
DENVER, COLO. Bluhill Foods, Inc.	GRAND RAPIDS, MICH. A. G. Woodman & Co.	SAN ANTONIO, TEXAS The A. I. Root Company
GREELEY, COLO. L. R. Rice & Sons	ONSTED, MICH. L. M. Hubbard Apiaries	SALT LAKE CITY, UTAH Miller Honey Co.
	MINNEAPOLIS, MINN. Mondeng Mfg. Co.	LYNCHBURG, VIRGINIA G. B. Lewis Co.
	MOORHEAD, MINN. Northwestern Supply Co.	WATERTOWN, WISC. G. B. Lewis Company
		POWELL, WYO. Robb, Bros.



Continental Can Company, Inc.

LITTLE & MOORE APIARIES
ORIGINALLY
LITTLE'S APIARIES
The JOHN M. DAVIS
STRAIN Italian Queens



Guaranteed to please
 or money refunded.

April 1 to June 1 to
 June 1 Nov. 15
 1 to 10, \$1.20 \$1.00
 10 to 100, 1.10 .90

LITTLE & MOORE APIARIES
 SHELBYVILLE, TENNESSEE

HERE IS A TOOL that does your
 spacing, quickly and accurately. There is
 positively no preliminary hand-spacing
 needed. Whether you have to space one
 super or a thousand you need only one pair
 of the new HAARMANN'S FRAMESPACER

Pat. Pend.



Made in all popular, special or combination
 of sizes. Ask for information and prices.

HARRY M. HAARMANN,
 1957 W. Lake Avenue, Glenview, Illinois

KOEHNEN'S
Package Bees and Queens
For Quality and Service
KOEHNEN'S APIARIES
GLENN, CALIFORNIA

WANTED Thousands of Rabbits
 and other Small Stock.
 Poultry and Birds. Let

STANDARD RABBIT & PET JOURNAL
 Bring you the Monthly News of Rabbit,
 Cavy, Small Stock, Poultry, Birds
 and Other Pets.

STANDARD RABBIT AND PET JOURNAL
 BOX 251 MILTON, PA.

Dovetailing Machine

FOR MAKING BEE HIVES AND
 SUPERS. NOW A SIZE FOR
 EVERY BEEKEEPER'S SHOP.

DETAILS ON REQUEST.

Carl E. Johnson Co.

1557 GREGORY AVENUE
 LINCOLN PARK 25, MICHIGAN

UNTESTED
ITALIAN QUEENS

75c, 85c in 100 lots. Liberal discounts on
 large orders of package bees. Write for
 prices. Remember you cannot buy a better
 untested Italian queen anywhere at any
 price. All queens guaranteed.

Winfield Gear Apiaries
 TEHAMA, CALIFORNIA

A CONSTANT MARKET FOR
YOUR BEESWAX
DADANT'S, Hamilton, Illinois



Contents

Editorial	271, 275, 277, 279
Seed or Honey Production—Which?—Roy A. Grout	284
A Half Century Review—Changes in Beekeeping—G. H. Cale	286
How to Solve the Section Comb Honey Problem—Paul W. Johnson	287
Double the Crop with No Swarming—E. S. Miller	288
Talking Back—C. B. Waldron	289
Pollination Payments; how to figure costs and profits —H. J. Moulton	270
Discussion—Do you think the two-queen system increases production profitably?	272
Advice to Beginners—Frank E. McLaughlin	273
Comb Honey from an Artificial Honeyflow—A. W. Woodrow	274
Beekeeping and Good Farming—E. F. Timson	276
The Origin and Evolution of the Honey Bee. Part II—Primitive Bees—Dr. Melville H. Hatch	278
The Cover Winner	280
Break Page Winner	281
Previews and Events	292
All Around the Bee Yard—G. H. Cale	294
The Federation	295
American Honey Institute	296
Crop and Market—M. G. Dadant	297
Postscript—Frank C. Pellett	298

Volume 90, No. 6

June, 1950

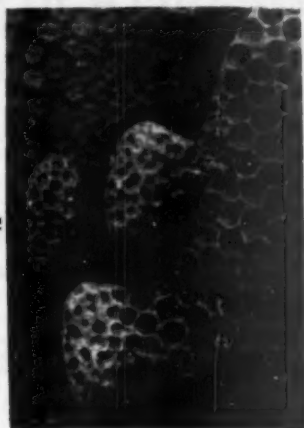
The American Bee Journal

HAMILTON, ILLINOIS

Editor—G. H. Cale

Associate Editors—M. G. Dadant, Frank C. Pellett, Roy A. Grout
 Managing Editor—Adelaide Fraser

Published monthly at Hamilton, Illinois. Entered as second class matter at the
 Postoffice Hamilton, Illinois; In the United States, Canada and Mexico, \$2.00 a
 year; two years \$3.00; three years \$4.00. Foreign \$2.50 a year; two years \$4.00
 three years \$5.50; Subscription stopped at expiration date printed on wrapper.



Ad Index

Aeppler Co. C. W.	289, 297	Johnson Co., Carl E.	260
Alabama Apiaries	286	Kelley Co., Walter T.	283, Inside back cover.
Amber Laboratories	285	Koehnen's Apiaries	260
American Bee Journal	287	Lewis Co., G. B.	287
American Rabbit Journal	282	Little & Moore Apiaries	290
Anderson, O. K.	290	Lohman Bee Co.	291
Arnouville, Oscar	286	Lotz Co., August	285
Australasian Beekeeper	287	Lucedale Apiaries	283
Barger's Apiaries	282	Marshfield Mfg. Co.	Inside back cover.
Bayou Bee Co.	286	McCord Mfg. Co.	290
Beekeepers Magazine	290	McFarling, Raymond	282
Berry & Sons, M. C.	262	McVay, J. F.	291
Bessonet Bee Co.	286	Merrill Bee Co.	282
Blue Bonnet Apiaries	290	Mich. Bee & Farm Supply Co.	290
Bolling Bee Co.	291	Miller, John G.	291
Bordelon Apiaries, B. J.	282	Modern Beekeeping	291
Bordelon Apiaries, E. J.	283	Morrison, F. E.	283
Calvert Apiaries	291	Muth Co., F. W.	286
Canadian Bee Journal	289	Nance, Troy	287
Cellulo Co.	282	Neises Co.	283
Coffey Apiaries	282	Plant, W. E.	290
Continental Can Co., Inc.	259	Plauche Bee Farm	282
Cuprinol Div., Darworth, Inc.	261	Pritchard, Lawrence	291
Dadant & Sons, Inc.	Inside front cover, 282, 285, 290.	Puett Co.	285
Daniels Apiaries	284	Rich Honey Farms	290
Davis, Thos. S.	282	Rio Grande Apiaries	282
Diemer Bee Co.	286	Root Co., A. I.	381, Back cover
Dixie Wood Works	283	Root Co. of Iowa, A. I.	283
Dotson's Apiaries	287	Roseview Gardens and Apiaries	283
Ducote, Alvin J.	282	Rossman & Long	284
Ellison & Sons, C. G.	286	Rusch & Son Co., A. H.	287
Flowers Bee Co.	290	Shackelford, John S.	261
Forehand, Huber	283	Shriner's	289
Forehand & Sons, W. J.	283	Spears' Apiaries	290
Foster Apiaries	281	Standard Rabbit & Pet Journal	289
Garon Bee Co.	289	Stoller Honey Farms	286
Gear Apiaries-Winfield	280	Stover Apiaries	284
Girardeau Apiaries	291	Sunkist Bee Co.	286
Gulf Coast Bee Co.	283	Superior Honey Co.	284
Haarmann, Harry M.	280	Taylor Apiaries	291
Hale Pub. Co.	282	Victor Apiaries	291
Hann, Albert G.	286	Walker, Eugene	287
Harper, Carlus T.	291	Weaver Apiaries	281
Hazel-Atlas Glass Co.	283	Weaver, Howard	283
Hogg, John C.	283	West, M. C.	291
Homan Bros.	281	Western Canadian Beekeeper	287
Homan, Farris	283	White Pine Bee Farm	287
Honey Sales Co.	287	Whit Apiaries	287
Hummer & Sons, Geo. A.	282	Winklett, D. T.	289
Hutchison Mfg. Co.	290	Wixson, Roscoe F.	282
Iowa Beekeeper's Association	286	Woodman Co., A. G.	291
Irick, F. O.	286	York Bee Co.	285
Jackson Apiaries	291		
Jensen's Apiaries	Inside back cover		

**FIRST QUALITY
Leather Colored Italian
QUEENS 75 CENTS
each**

10% discount for 50 or more.

John S. Shackelford
Rio Oso, California

BE SURE

You Buy the Best

Book your package orders
NOW!

**BLUE RIBBON ITALIAN
BEES AND QUEENS**

FOSTER APIARIES
COLUSA, CALIFORNIA

"GLEANINGS"

World's Most Popular Bee Magazine—
64 pages—Lots of pictures. 1 year, \$2.00;
2 years, \$3.00, 3 years, \$4.00.

THE A. I. ROOT CO.
MEDINA, OHIO

**THOSE GOOD
WEAVER QUEENS**

Where customers are pleased

1 to 24	\$.85
25 to 99	.80
100 and up	.75

WEAVER APIARIES
NAVASOTA, TEXAS

**ITALIAN BEES
AND QUEENS**

Book your orders early, to get pick
of dates. Health certificate, and live
delivery guaranteed.

PACKAGES WITH QUEENS

	2-lb.	3-lb. Queens
1 to 49	\$3.50	\$ 4.75
50 to 100	3.40	3.25
100-up	2.35	2.15

Homan Bros.

RT. 2 SHANNON, MISS.

Renew Your Subscription



Just Off the Press **QUEEN REARING**

A NEW BOOK ON AN IMPORTANT SUBJECT

Authors—H. H. Laidlaw, Jr. and J. E. Eckert

It combines all the scientific knowledge on bee breeding with a clear explanation of the practical methods of rearing queens both commercially and at home.
160 pages—60 illustrations—substantial cloth binding

Price \$2.50 Postpaid

DADANT & SONS, Inc.

Hamilton, Illinois

INSURE YOUR HONEY CROP BY USING

Berry's Reliable Tested Italian Bees

55 years with the bees gives you, after test, America's Best, Package Bees and Queen Bees. Strengthen those weak winter worn colonies with Berry's Booster Queenless Package Bees

PRICES—Package bees with queens and Individual Queen Bees

	Queens	2-lb. Pkgs.	3-lb. Pkgs.	4-lb. Pkgs.	5-lb. Pkgs.
1 to 50	\$.70	\$2.60	\$3.50	\$4.45	\$5.40
50 to 100	.60	2.35	3.25	4.20	5.15
100 and up	.50	2.15	3.00	4.00	5.00

Queenless Booster Packages, deduct the price of queens.

All queen bees we ship in our packages or individually are of selective Quality. Only those that we ourselves would use in our own apiaries do we ship. The culs we kill.

We guarantee safe arrival, prompt shipment, and that our bees are the best to be had at any price.

We clip queens' wings on request free of charge. We have no disease and otherwise from a health standpoint are unsurpassed by any. In 1948 and '49 we shipped over 20,000 packages of bees without a single complaint as to nosema and but one complaint as to supersededness.

M. C. BERRY & SONS : Box 684 : Montgomery, Ala.
OLDEST ACTIVE PACKAGE SHIPPER SOUTH

Caucasians Unlimited

Unlimited in Quality

Unlimited in Quantity

Probably the largest producer of quality Caucasians exclusively, offering the best in Queens.

SUMMER PRICES EFFECTIVE AFTER MAY 15

1 to 49	75c each
50 to 99	70c each
100 or more	65c each

THOS. S. DAVIS, Rt. 7, Box 3914, Sacramento, Calif.

Treat Your Hives With

CUPRINOL [®] STOPS ROT

Applied by brush, spray or dip to the bare wood, Cuprinol will greatly lengthen the life of your hives by stopping rot. May be painted over. Does not offend bees. At hardware, paint and lumber dealers or direct. \$3.90 gal.; \$1.45 qt. Check or money order. No C.O.D.'s.

CUPRINOL Division, Darworth Inc.
61 Maple St. Simsbury, Conn.



PACKAGE BEES — ITALIAN QUEENS

	2-lb. with queen	3-lb. with queen	4-lb. with queen	5-lb. with queen
1 to 99	\$3.00	\$3.90	\$4.70	\$5.30
100 up	2.75	3.75	4.40	5.00

QUEENS 90c each. Air mail postpaid. Clipped on request
No better quality at any price—Satisfaction guaranteed.

GEO. A. HUMMER & SONS,

Established 1892

Prairie Point, Miss.

GLASS AND TIN CONTAINERS

5-lb. glass jars, white caps, carton of 5. \$3.25
3-lb. glass jars, white caps, carton of 12. .58
2-lb. glass jars, white caps, carton of 12. .62
1-lb. glass jars, white caps, carton of 24. .90
Order 25c. glass 8c per carton less than list price, 100 cartons 10c less. Write for complete list and quantity prices on tin, modernistic glass, paper supplies, sections, foundation and other items.

ROSCOE F. WIXSON
DUNDEE, NEW YORK

Renew Your Subscription

Root COMB HONEY SECTIONS

Smooth
white basswood lumber.
Accurately made,
exactly right.
Fold without breaking.
Dovetails correct—
hold tight.
Large stock for prompt
shipment.

• • •
The A. I. Root Company
OF IOWA
COUNCIL BLUFFS, IOWA

ROSEVIEW

Caucasian queens are daughters of northern-bred, production-tested old queens that have never swarmed in at least two seasons on comb honey production. These old queens are also from non-swarmling mothers.

RESULT—

Long trouble-free service for you. Try them and see for yourself.
Untested \$1.25 each. Breeders \$3.00 each
Tested \$2.50 ea. Tested Breeders \$2.00 ea.
An extra queen with each 25 ordered.

ROSEVIEW GARDENS & APIARIES
HAWKESTONE, ONTARIO

Italian Pkg. Bees and Queens

Queens after May 1st. 75c each, post-paid—10% discount on orders of 50 or more.

F. E. Morrison

Rt. 3, Box 3686, Auburn, California

looks good ...
tastes good

This is the
message every
HA Honey Jar
gives to
consumers.



They're glistening,
easy to pack
visual salesmen.



Hazel-Atlas Glass
Company

Wheeling, West Virginia

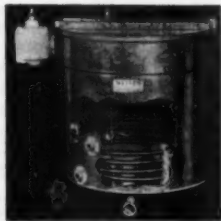


Illustration shows our heating tank with coil and power agitator.

Use Neises Extracting Equipment in Your Honey House

We manufacture Extractors, Clarifiers, Filters, Settling Tanks, Heating Tanks, and other equipment for extracting and bottling honey. Made in either galvanized iron or stainless steel.

For more information write to

THE NEISES CO.

Box 249

Marshfield, Wisconsin



Seed or Honey Production— Which?

Roy A. Grout

BEESKEEPING finds itself unprepared for the part it must play in legume seed production both now and in the immediate future. The average beekeeper scarcely has progressed further than thinking that he shouldn't have to continue to pay for beekeeping locations. The commercial beekeeper is looking upon pollination through the eyes of the honey producer, which should be a practical approach for most, but he is finding it extremely difficult to see beyond his honey-producing nose. A very few enterprising large honey producers have seen the excellent possibilities of abandoning honey production for the keeping of bees for pollination purposes.

It is true that we do not know all the answers. I certainly do not propose to set myself up as one who even pretends to know them. Risks are involved in these ventures but producing a honey crop also is a risk. But just as sure as honey bees are needed for more than 89 per cent of the pollination task involving more than fifty food and seed crops, beekeepers are going to find themselves in the business of using their bees to increase seed and fruit yields.

Most will have to combine honey production with pollination. This is a reasonable and practical approach for many. They either are not located in areas where seed and fruit production is carried on extensively or they do not have the capital to risk in keeping bees entirely for polli-

nation. Beekeepers do not have to be told that they have come through a period of several lean years. Combining honey production with pollination may mean servicing an orchard in early spring, building the colonies for the clover flow while preparing nuclei which will be full colonies for a later pollination, or doubling up producing colonies for pollination after the flow. Most will only be interested in fall flower sources as build-up for wintering.

At the recent Iowa meeting, problems involved in increasing legume seed yields played an important part in the two-day session. R. J. Walstrom, formerly Nebraska State Bee Inspector and now Extension Associate at Iowa State College, reported results of the Nebraska program for legume seed production. Because of misunderstandings and problems relative to the pollination of alfalfa, the Nebraska State Beekeepers' Association has drawn up a printed agreement which is short and not too legal in aspect. It briefly presents three alternate plans for a suitable agreement between the grower and the beekeeper: (1) The beekeeper agrees to furnish four colonies of bees of proper strength per acre and at a specified time for 25 per cent of the seed harvested, with the grower taking care of insect control and harvesting. (2) The beekeeper furnishes four colonies per acre for 10 cents per pound of seed harvested, with the grower taking care of insect control and harvesting. (3) The beekeeper furnishes four colonies of bees per acre and takes care of the spray program and the harvesting for half of the seed harvested.

These three alternate plans are not claimed by the Nebraska association

to be the final answer or the ideal arrangement, but they are the best they have been able to develop and give to both the grower and the beekeeper a program by which to judge the merits of their own agreements. Needless to say, other methods or arrangements also are being used in this alfalfa seed producing area.

Mr. Walstrom stated that Cook Brothers, of Nebraska, have been providing effective pollination for alfalfa, and were the first to undertake a program of insect control and seed harvesting for half of the crop. They found it necessary to take over the insect control program to adequately control harmful insects and to protect their bees, and they assumed the harvesting of the seed crop when they determined that much seed is lost through faulty harvesting methods. Mr. Walstrom stated that as much as 75 per cent of the seed crop has been lost in this way.

Discussing the problem from the beekeeper's standpoint, Glenn O. Jones, secretary of the American Beekeeping Federation, pointed out that it is extremely difficult to measure the pollination services of a colony of bees, and that, inasmuch as cross-pollination was just one of the necessary factors in producing a seed crop, it was a rather intangible thing to the seed grower. Because of these factors, Mr. Jones urged beekeepers to take the risk and approach the problem on a performance basis, either sharing the seed crop or on some other performance basis, rather than to "set a price" on this service by furnishing colonies for a stipulated fee. He told of a program that he has worked out with a farmer

where they share equally in the cost of the crop and its management, and share equally in the seed harvest and the honey crop. Such a program does have the psychological advantage of causing the farmer to become interested in protecting the bees from harmful insecticides and in providing ample bee pasture throughout the year.

B. A. Haws, formerly in insect control work in Utah and now a member of the Department of Zoology and Entomology, Iowa State College, reminded beekeepers that to increase seed yields, the grower must know the best varieties to plant, how to plant and get the best stands, the best methods of insect control, adequate pollination, and improved harvesting methods. He particularly stressed the importance of insect control stating that a good rule is: Keep the harmful insects off the crop and keep the beneficial ones on the crop.

Mr. Haws spoke briefly of some pollination experiments which he observed recently in Utah. In one large field of alfalfa, large screen cages were constructed and covered to exclude insects. The cages were long and high enough for men to walk around inside. In one cage, with a heavy lygus bug infestation, but adequately pollinated by one colony of bees, only a nominal yield of seed was obtained. In another cage, the harmful insects were controlled but no bees were admitted for pollination, and seed yield again was relatively low. In a third cage, the pests were controlled and adequate pollination by honey bees was provided. Here the seed yield was manyfold larger than in the other cages. Haws stated that alfalfa grown in experimental plots, which were artificially infested with harmful insects, resulted in different characteristics of plant growth, with smaller racemes and less opportunity for seed set. Another plot nearby, where harmful insects were controlled, had large plants with long racemes, offering good possibility for set of seed.

Mr. Haws used these results to demonstrate the importance of diagnosing the seed production problems through constant contact with the field in order to determine the number and kinds of harmful insects and the damage to the plants. He recommended that growers take random sweeps with an insect net in a planned and frequent program, and that he gauge his insect control on

his findings. He pointed out that, although a field may be free of harmful insects, if neighbors cut their fields, the grower soon will find his field the host to his neighbor's insects.

The object of such a program is to keep the harmful insect population at a minimum from early in plant growth through the blooming period. In the prebloom program, he recommended the application of DDT, or equal parts by weight DDT and

demand and need for these seed crops.

The U. S. Department of Agriculture recently released figures concerning the supplies of legume seeds and estimated need of grass and legume seeds through 1960. A small portion of these figures are tabulated below. The figures for production, imports, and consumption are in pounds and are based on those for 1948.

Legume	Production Clean Seed	Imports	Domestic Consumption	Estimated Domestic Use 1960	Estimated Domestic Use 1948
Ladino clover	1,950,000	370,000	2,019,000	9,012,000	14,835,000
Alsike clover	15,150,000	4,183,000	18,264,000	13,616,000	14,395,000
Alfalfa	50,574,000	30,288,000	80,753,000	102,368,000	130,091,000
Red clover	86,538,000	4,325,000	91,218,000	120,337,000	148,330,000
Sweet clover	20,688,000	27,332,000	53,963,000	109,278,000*	138,757,000*
White clover	3,910,000	184,000	4,192,000	3,931,000	12,495,000

*This is a total of Hubam, Madrid, white, and yellow sweet clover.

toxaphene and, if absolutely necessary to treat the plants when in bloom, the use of toxaphene applied early in the morning, late in the evening, or at night. Toxaphene is recommended since it is effective against grasshoppers and other harmful insects but is apparently less toxic than other insecticides to honey bees. He further reported that this summer Iowa State College under the supervision of Dr. J. H. Lilly will conduct an extensive series of experiments with and without honey-bee colonies, and plans to use four colonies per acre.

The legume seed situation currently continues to be critical. The Soil Conservation Service is very much aware of this and, in addition to the "Planned Pollination" leaflet which they have been distributing in the Southwest, are preparing a similar leaflet for distribution in eight states which comprise their midwest region. The Department of Agriculture at present is holding a series of meetings of bureau chiefs to study their problem of retiring more than 28 million acres of cash-crop lands to grasses and legumes, but currently are depending primarily on the price support program for 32 kinds of grass and legume seeds to encourage increased production. There is reason to question whether the price support program will materially increase supplies of these seeds, largely because prices for such seeds already are higher than the support levels. The coming application of acreage controls on some of the cash crops, should however result in more land being turned to grass and legumes and, we might assume that a proportionately larger acreage will be left for seed harvesting in view of the

An examination of the above figures reveals that, with one exception only, the domestic consumption of these popular legume crops exceeds our production of clean seed. In the case of sweet clover, we import approximately half of the seed we need, and we import one-fourth of our alfalfa seed. The estimated domestic use of these legume seeds for 1950 shows a marked increase in the need for these seeds, with the exception of alsike clover and white clover. It nevertheless indicates an estimated need for Ladino clover seed of more than four times our 1948 consumption, 25 per cent more alfalfa seed, 50 per cent more red clover seed, and 100 per cent more sweet clover seed. And the 1960 estimated use by farmers increases considerably over the 1950 figures.

This should certainly mean improved bee pasture if these programs of the government can be put into effect. The principal problem is growing the seed and, as Dr. C. J. Willard, Ohio State University, has pointed out, the chief bottleneck in the production of red clover and alfalfa seed in the Corn Belt, at least, is lack of adequate pollinating insects. And here is where the honey bee must be called upon to meet this national need.

The responsibility of this great pollination problem rests squarely on the shoulders of the beekeeping industry. We must meet this challenge and we must do it quickly. It is our golden opportunity to make the pollination services of our bees pay more of the cost of beekeeping—to become a prosperous industry, in fact—and to attain a high position of importance in our national economy.

— Illinois.



A Half Century Review of Changes in Beekeeping

by G. H. Cale

I was just a shaver that day—nine years old, barefoot—when old man Linas stopped his farm wagon at the back of one of grandfather's long greenhouses and asked me to help him place twelve colonies of bees, one in every third shutter. Each hive was single story, but with two entrances, one in front and one in back, so the bees could fly both inside the house or outside as they would. Then Linas handed me some ordinary kitchen saucers, with the admonition to keep them "full of sugar water so the bees would have plenty to eat." The saucers were set beside the entrances of each hive and I diligently kept them full, robbing or not.

Such was my early introduction to the use of bees on the farm. Inside the glass houses they did an excellent job of cross-fertilizing cucumbers for the New York market. Years later, as an inspector in Massachusetts, a survey disclosed that several hundred colonies in the Boston area were still used for the same purpose.

But bees for honey seemed to me the acme of the profession. Still in the playful years, I trudged the Berkshire Hills with Elbert Dewey, an itinerant bee tender, who not only had his own apiary but looked after the yards of New Englanders who summered in the hills and had bees as a part of their summer gardens. It was a must. Wasn't Massachusetts the site of the first bee yard in this country, from whose grassy confines American beekeeping moved out with the expansion of the farms?

We did well, too. Comb honey was what everybody wanted and what most beekeepers tried to produce. It was not too good either. There were many sizes of "honey boxes" and

many advocates of crowding down the single hives of the day to force the last ounce into the sections. Wintering was a problem and few realized that the trouble was not the long New England winters, but the scarcity of winter stores that decimated the ranks of almost every bee yard.

When the honey "slinger" became a honey extractor, and the pure food laws followed to guarantee purity, one enterprising New Yorker almost flooded the New York market with liquid honey in bulk containers. It was unheard of. With the new contraptions and with full combs to use, colonies could be made to produce two or three times as much honey as the number of comb honey sections previously produced. So, why produce comb honey? The beekeeper found it much easier to manage his bees. Greenhouses and fruit orchards were forgotten. The big thing was to turn out the liquid gold in huge amounts.

But still the wintering problem was the biggest one facing us. As always the trouble was the greed of the beekeeper. He wanted the honey. He did not want the bees to have it. When Demuth first suggested he had found an automatic feeder, he turned beekeeping upside down. Said he, "I have found a feeder that provides all the stores the colony needs in winter; it turns itself on when the bees need food, and it turns itself off when the need is over. It is completely automatic." When asked to explain such an astounding discovery, he would smilingly answer, "It is a hive body full of honey left with every colony in the fall." Heresy! Wasn't this honey the property of the beekeeper?

But a few followed his wisdom

and soon the use of two hive bodies became a standard practice, not only to provide abundant winter stores but to provide brood space for the queen. With this practice, larger and better colonies were the rule and crops of a hundred or two hundred pounds of extracted honey were reported.

Now the race was on for still more and more honey. The hobbyist gave way rapidly to the commercial operator. Even today most beekeepers, whether they have few or many colonies, look to the sale of their honey as a part of their income.

The once good markets sagged and prices tended downward. The beekeeper, seldom a skillful salesman, began to depend on others to dispose of his honey, resulting in still lower prices. But once a beekeeper, always a beekeeper.

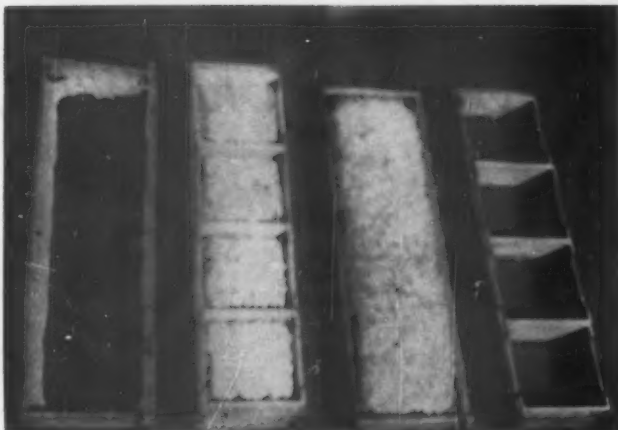
Then came sweet clover. For the first time on this continent appeared a honey plant second to none on the earth; and as sweet clover increased, commercial beekeeping increased. This large scale commercial enterprise was boosted tremendously when the southern package bee shipper came on the scene. Any man now, with capital, can be the "proud" owner of as many bees as he can buy in a single season. His greatness can fluctuate to meet changing conditions, capital returns, markets; he can have five hundred colonies one year and five thousand the next.

Now the big squeeze was on. Sink or swim; survive or perish. Only the most skillful could stay on top. The hard road and the automobile truck made it possible to take bees to any honeyflow anywhere, anytime. Beekeeping was big business.

Then, almost as dramatically as it had swept over the farm lands, sweet

How to Solve The Section Comb Honey Problem

by Paul W. Johnson



IN an effort to supply their customers with section comb honey, beekeepers are aware of the fact that the profits are very uncertain. One of the main reasons for this, of course, is the decline in bee pasture. I have produced section comb honey for a certain per cent of my customers for a good many years, and know something about the ups and downs of the business, such as poor seasons, cull sections, swarming, and so forth.

I am always making improvements and trying new methods. Now I am producing comb honey in sections without having any culls. Swarming is kept at a minimum, with very little cleaning of sections, and no foundation to fasten in the sections. You need not have the supers ready until the flow is well under way. Any season that you can produce comb honey in half frames you can produce it in sections. We produced a super of clover section comb honey in September although the bees were working on heartsease at the time.

My method is to let the bees produce my comb honey in the 5 1/8 inch depth, half frames, using nine frames

to the super. We use as light a foundation as possible, and we wax it in. As soon as the bees get a super finished, you are ready to start producing section honey. Remove the frames of honey from the bees while the cappings are nice and white. Any frames not finished should be set back on the bees.

Lay the finished frame of honey on its side on a rack covered with 1/4 inch hardware cloth with a drip pan underneath. Place your section box on top. Take a sharp knife and cut out a square of honey to fit the section, using the section box as a guide for your knife. Cut out four squares, then lift the empty frame and spread the cakes apart. Slip the sections down over the square of honey (they must fit tight). The next step is to assemble them in the section super. You need not use separators between, but may if you wish. Set the section super on any average colony and you will be surprised how quickly the bees dry and fasten the comb in the sections, usually in about 48 hours. We use only beeway sections and as they are on the hives such a short time we do

not paraffin them as they require very little, if any, cleaning.

It is no longer a question of how much section comb honey your bees will make, for under this method they will make whatever amount you prepare for them. This is precisely what you will get too, for there are no culls. You can produce section honey any time during the season.

We use only honey that is fully capped. **RESULTS:**

- Full Weight Sections 12 to 16 oz.
- No Culls
- No Foundation in Sections
- No Split Sections
- Very Little Cleaning of Sections
- No Paraffin on Sections
- More Sections per Colony
- Swarming Reduced to a Minimum
- A Much Longer Season to Produce Section Honey.

While I do not expect to take any prizes at the State Fair with sections, they are nice. My customers are well pleased, for now I am able to furnish them with plenty of section honey.

Indiana.

clover began its downward trend. There were better soil builders with some crop possibilities; the usual enemies besieged the wide acre—plant disease, insects. Farmers, once abundant sweet clover users, now turned from it to such an extent that commercial beekeeping as a big venture still suffers from the tremendous problems that this has imposed. Honey plants are not in enough proportion to support the thousands of colonies that a few years ago could be found in so many places. This disruption brought crowding in those

areas where honey plants had remained with more stability.

Fifty years have passed since that barefoot boy helped old Linas shove those twelve hives into the windows of the cucumber house. Today's management must meet today's problems. And they are so different.

We have lost some of our skill in production. Just now, attempting to get away from the excessively high cost of extracted honey production, many are once again trying to get into comb honey. Bulk comb honey, long a well-liked country product,

may grow in volume beyond its market. Section comb honey, that hard-to-get luxury item still scarce, may again find its way to store shelves, travel-stained, light weight, indifferent, as it has done from time to time in the past.

But skill and know-how are not confined to comb honey. There are cans of extracted honey, thin, poorly graded, indifferently run into glass and tin, to add up to a chaotic market, a travesty in the face of the undeveloped possibilities.

(Please turn to page 293)

Double the Crop With No Swarming

by E. S. Miller

"I find there is something new to learn in beekeeping every year. This article is the result of 45 years of experimenting. My colony average in the last three or four years has been well over 100 pounds; my 1948 crop a little over 3,000 pounds from 15 colonies."—Author.

WOULD you like to eliminate swarming completely, double your crop and, at the same time, reduce your labor by one half?

I will first assume that in spring you have strong colonies in two-story hives with abundant stores. Italian queens of a good strain not over one year old, good combs, top and bottom ventilation and, in summer, a reasonable amount of shade. Also, that you are operating for the production of extracted honey rather than for increase in number of colonies. Well, here's how it can be done:

About the time of apple bloom or as soon as colonies become sufficiently strong, confine the queen to the lower story and keep her there throughout the working season. If you have difficulty in finding her, just shake off the bees and queen from the top story and let them run in below the excluder. Next, insert between the two sections of the hive a hive body with ten combs or with foundation—preferably combs. Your hive will now be three stories. The second story will become a food chamber to be left in place during the whole year. These colonies we

will call our producing colonies.

Next, start nuclei by taking from each top story two or more combs of hatching brood with adhering bees and give each nucleus a laying queen which you have previously ordered from the South. Or, if you prefer, get some package bees. Give each nucleus one or more combs of that honey you have reserved for this purpose from last year's crop. If well supplied with honey and pollen, they should build up to full colonies in advance of the main honeyflow. Let's call these our booster colonies.

Just before clover begins to yield nectar, Demaree the producing colonies. That is, remove all brood except one comb to the top or fourth story, replacing it with drawn combs (not foundation). Be sure the queen is kept in the lower story. You can remove queen cells, if any, from the top, nine or tens days later.

Preceding the main honeyflow unite by placing on top of each producing colony a booster colony over a second excluder and a sheet of newspaper. After the bees become acquainted, shake bees and queen from the top story so they can run in below. The queens will fight with usually the younger surviving. Where the main flow comes late, as in August and September, surplus early honey should be removed before uniting.

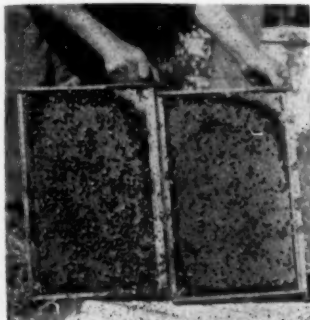
With only half as much brood to feed, the united colony will produce

more surplus than would the two separate colonies. It may not be generally known that in the four months following June 15, a colony with a good queen will consume approximately 200 pounds of honey in brood rearing. It does not pay to rear brood late in the season for colonies that will produce little or no surplus in the next eight or ten months, and, in the meantime, consume hundreds of pounds of honey.

Advantages of the system are: 1. Swarming is eliminated. You don't have to chase swarms nor hunt queen cells, a useless procedure. You don't even have to find the queen. 2. Colonies are automatically requeened. 3. The crop is more than doubled. 4. With fewer colonies to winter, there is less labor, less honey consumed in wintering and, with stronger colonies, fewer winter losses.

The modified system of Demareeing, as shown above, has been in use many years and has proved to be the most dependable method of swarm prevention. Little attention, however, has been given in bee literature to the advantage derived from uniting, perhaps due to the fact that few realize the enormous amount of honey consumed in brood rearing. By combining the two methods I have been able to increase per colony production to three or four times the average in this locality.

Indiana.



How-to-do-it

Well Drawn Brood Combs

Place your new hive body with foundation on the top of another hive and get away from the effect produced when you try to get the foundation drawn in the bottom body. You will see, if you observe your combs, that the top bodies usually hold the best combs; the lower ones have poorer combs. When it rains the water splashes in the open entrance and dampens the bottoms of the frames. When the wind blows, or when it is cold, this also affects the lower combs. It is a poor place to draw new combs from foundation. When the foundation

is placed over the first body we get away from the effect of the entrance and always find more perfectly drawn and filled combs. Since our purpose in good beekeeping is to get a maximum population of workers for the harvest, any reduction in comb space due to poorly drawn combs is reflected in a reduction in population. Draw your combs in the upper hive body; keep the front entrance reducer in until the flow begins. Have a well drained bottom board under each hive. Keep the colonies sheltered behind windbreaks. Also keep your hives in the sunshine. In hot weather put on a shade board if necessary.—B. F. Morris, Indiana.

Talking Back

by C. B. Waldron

AFTER reading John Holzerlein's excellent article "Why Honey Prices Must Rise" in the April issue of the American Bee Journal, I re-read it and reached for the typewriter.

He says: "Much of the work necessary to get honey back in line must be done by the packer and seller of packed honey." Well, one reason—a good one—why the price of much honey **won't** rise is because certain packers are literally denaturing this wonderful bee-sweet. Too much honey is filtered, giving it that unnaturally clear, bleached-blond look; overheated to stave off granulation; and, of course, as we all know, under-advertised.

So many times people who stop by our honey sign tell us: "We don't buy that store honey any more. It doesn't taste like real honey." This is our cue to produce a sample jar and spoon. The reaction is invariably the same: "That's **REAL** honey." And a new customer is made, and not at cut-rate prices, either.

Another frequent customer criticism which I cannot explain or refute is that commercially packed honey is thinner than it should be. Consumers who are honey lovers know what good honey should look and taste like; they resent attempts to sell them something called honey which is a far cry from the product as it came from the comb. Believe me, they are not repelled by a lack of brilliant transparency, or by pleasant variations in flavor. Of

course, it is usually inadvisable to try to sell dark honey to a light-honey lover or vice versa. (But I have never met a blond-honey fan who didn't go with enthusiasm for the marvelous flavor of the darker apple blossom honey.) We take the time to explain to our roadside trade and to our retailers the different flavors resulting from the different flows, and demonstrate with samples whenever we can.

Of course this personal contact is impractical for the big packers; however, it's not impractical but most appealing and profitable to put it in a well written ad aimed at thousands—millions—of customers. Honey has a natural appeal matched by no other sweet. Why not take advantage of it?

Just think what a series of true and original ads could do for honey sales, for instance: True Honey Tales. Here's one from our own experience. One of the family—a confirmed honey and non-sugar user—last month underwent a major operation (not abdominal). Before the nurse appeared in the morning to prepare her for the operating room, the patient took from the jar which accompanied her to the hospital a good swig of honey, holding it in her mouth as long as she could. (Patients are usually denied any sort of nourishment just before operation). Though her physical condition had been far from perfect, she came through the surgery in excellent shape, and was permitted to go home

not on the usual eighth day after this particular operation, but on the fifth, to the outspoken surprise of the nurses. She confessed afterwards to the surgeon what she had done. He opened his eyes wide and commented, "Good idea."

Incidentally, have we a national committee to work with doctors on the uses of honey in practice, the results to be offered to medical journals for publication? If not, why not? The A. M. A. seal of approval should not be enough to satisfy us.

One other part of Mr. Holzerlein's article struck a spark which may seem irrelevant here, but it is of value to beekeepers as a time and money-saving short cut. In this third paragraph he says: "Paint . . . much used by beekeepers, sells at \$4.50 to \$6.00 per gallon." Beekeepers interested in saving on this item should preserve their hives and parts with the less expensive Cuprinol. No painting is necessary after the first and only treatment which, though less pretty than paint, is permanent. I know of one commercial honey producer who uses it and recommends eliminating painting entirely.

To return to our main topic—the low price of honey. That is and will remain the fault of those beekeepers and packers who lack the imagination, let alone plain horse sense, to tell consumers why they should buy honey. "A bird that **can** sing, and **won't** sing, must be **made** to sing"—or he won't get to Florida for the winter.

Sure-I read it in ABJ!

These words are said by many beekeepers as they discuss their problems and the various methods of management they have tried and found to be successful. Yet we of the American Bee Journal staff do not always hear just how the articles we publish have helped you become a more successful beekeeper. We like to see the results of our work but they are not so easy to see as a honey crop at the end of the season. So will you write and tell us just what articles during the past year or two which you have read in ABJ have

helped you improve your methods and make more money? We'd appreciate knowing the results! If your bees produced 200 instead of 100 pounds of honey per colony because of a method you read about and tried, let us know the facts and figures. If you tried a new kind of venture with your bees such as comb honey production or pollination, tell us how you came out. We can build a better magazine for you if we know how you personally are profiting from reading the Journal.

How-to-do-it

To Remove Propolis

Jan. I. Hambleton, Chief of the Division of Bee Culture, says that a lanolin preparation sold under the trade name, "Quickce," is the best thing he knows to remove propolis or even tar from the hands. No water or washing is required. You merely apply the grease-like material to the hands and wipe them dry with a paper towel. It can be obtained from companies supplying garages with specialty items.

Pollination Payments

How to figure costs and profits

by H. J. Moulton



H. J. Moulton and son James nearing the end of a 400 mile round trip from central Oregon clover area. The modern truck with a low bed insures easier, faster and safer moving. Cab over engine adds a third more loading space on same wheel base and provides greater comfort for crews and bees. Note full length duffle boxes on both sides for supplies, tools, rations and bedding.



A load of Dadant hives, unroped, for distribution in orchards. Tops, bottoms and supers are held together with one steel strap. Orchardists normally rent one colony for two acres of normal bloom and will gladly pay an extra dollar rental for Dadant colonies.

WE have learned through experience, that when properly informed, fruit and seed growers are quite willing to pay a rental fee sufficient to reimburse the beekeeper for his labor and expenses. Being businessmen, they recognize that for their own future prosperity, bees must be available continuously, which means that they must contribute to the beekeeper's success.

We find it necessary, at times, to schedule our expenses in advance in order to establish a fair rental fee. Each specific pollination project should pay its share of all expenses if the beekeeper is to stay in business.

Assume that a beekeeper owning a 600 colony outfit will use the entire outfit for fruit pollination, then move to a location for a honey crop and later rent his entire outfit for pollinating a late clover seed crop. His fruit pollination would represent about one-third of his annual income and should bear that amount of his annual depreciation, overhead expense and interest on invested capital on equipment used in that operation; the entire prime cost can be quite accurately estimated and charged to that operation.



Some bees are moved to the mountains for a summer vacation. H. J. counting bee visits to blossoms of a fireweed plant.

The husband and wife combination makes an economically sound business organization. Lydia and Harold Moulton enjoying a leisurely afternoon.

ation. Honey production is not considered an income factor in fruit pollination but may yield some income during an operation later in the season. Our experiences have proved that very little honey is produced in connection with a pollination program. This condition prevails mainly because of the heavier bee concentration per acreage of blossoms than would perhaps exist where bees were operated solely for honey production.

Several factors may change the cost of any single project quite radically. A move to a compact orchard area close to home for a two weeks' period where the bees will require no care during the short pollination season may show a total cost of somewhere close to \$3,000.00 which would establish a rental fee of \$5.00 each for the 600 colonies. A later move to a late clover area much farther from home, widely scattered, two to three months' pollination season, involving many long trips when nearly half of the labor time will be consumed in traveling, there will be many more restaurant meals and nights in hotels, more loading and unloading labor needed, and the complications of hot weather moving during short nights, will revise the costs upward to where a rental fee of

As We See It

PROBLEMS IN POLLINATION—A correspondent wisely makes the following statement: "There are two major factors which slow our progress (in pollination). One is the suspicious farmer; the other is the overenthusiastic beekeeper. One is just as great a handicap as the other." We certainly agree and suggest the need for the beekeeper taking the risk to demonstrate to the suspicious farmer the vital part that adequate cross-pollination plays in producing a legume-seed crop. We also admonish the beekeeper to know his facts and to understate rather than to overstate what bees can do, for although cross-pollination is necessary for set of seed, there are many other factors which also can operate to affect the ultimate seed yield.

Producing increased yields of legume seeds involves knowing the variety that is best adapted to an area and its soil and climatic conditions, knowing how to prepare properly the soil and to plant in order to obtain a good stand, which crop should be

selected for the seed harvest, how to control harmful insects, what is the optimum number of colonies for pollination in relation to the crop and competing plants in the flight range of the field, when and how to harvest with the least loss of seed, and the effect of weather. Each of these factors operate to influence the final seed yield. The seed grower can do something about all of these—even the weather, according to the Soil Conservation Service, through soil and water conservation practices. But, improper handling of one or more of these factors can upset the seed production program. Honey bees alone do not accomplish seed production. Can you blame the farmer for being suspicious?

Jas. I. Hambleton, Chief of the Division of Bee Culture, makes the suggestion to beekeepers to cover one or more areas in the field with a screen of nylon or other fine screening to exclude all insects. This is one way of proving to the suspicious farmer whether or not your bees are contributing to obtaining a seed crop.

\$8.00 will not any more than pay the total costs of the operation.

Some consideration must be given to excessive bee loss due to indiscriminate use of insecticides, inclement weather of considerable duration necessitating feeding, truck failure with attendant bee losses in the load, and flooding of bee locations in irrigated districts, all of which may be provided for in part in an item set up for that purpose: Bees, Queens and Bee Feed. This item is set up primarily for replacing winter losses, equalizing or boosting substandard colonies and supplementing depleted stores to insure having desirable units, especially for spring pollination of orchards. Obviously, all labor in connection with equalizing, feeding and making ready for the actual move should be charged to that particular operation.

The following schedule for estimating our costs has served us quite well with a considerable degree of accuracy for establishing rental fees. The values given are fairly accurate estimates and will illustrate the practical application of the schedule.

— Oregon.

PRIME COST: (estimated)

Labor, self and hired	909 hours	\$1.25	\$1,136.25
Truck	3151 miles	.12	378.60
Auto	380 miles	.08	30.40
Hotel and Restaurant Expense			122.30
Bees, queens and bee feed	600 colonies	1.00	600.00

\$2,267.55

DEPRECIATION:

Hives	600	13.50	\$8,100.00 @ 10% depr.	810.00
Truck			2,810.00 @ 20% depr.	562.00

Annual depr. 1,372.00
Charge 33-1/3%

457.33

OVERHEAD EXPENSE:

Telephone and Telegraph		126.03
Taxes and License		113.19
Dues and Trade Publications		35.00
Stationery, Stamps, Office Expense		29.88
Rent		
Advertising		

Annual overhead applied to this

304.10

Charge 33-1/3%

101.37

INVESTMENT:

Hives and Moving Equipment	600	13.50	\$8,100.00
Truck			2,810.00

10,910.00

Interest

4%

436.40

Charge 33-1/3%

145.37

Total Cost

\$2,971.62

Profit

28.38

Total

\$3,000.00

RENTALS:

600 Colonies @ \$5.00		3,000.00
-----------------------	--	----------

Discussion

Do you think the two-queen system increases production profitably?

G. H. CALE, Jr., Illinois

The use of two queens for increased production is not new in beekeeping. Occasionally more than two queens have been tried. The question of time expended in management is one of the important considerations in the use of two or multiple queen systems.

We have tried, with some success a plan quite similar to that given by Mr. Miller and we find that the time required per colony is no more than that for single-queen colonies. The difficulty seems to be in making the separations or set-ups so that a new queen will be readily accepted by the queenless portion. Also there is some tendency for the new queens to disappear after they have been laying for a while.

We use an empty super of combs on top of the lower body, then a double screen separator on the super; and the queenless brood and bees at the very top. The new queen is put in, using a mailing cage with candy so two or three days will pass before her release. This allows time for the older bees of the top portion to fly out and return below leaving relatively young bees with the new queen. Do not disturb the new brood nest above for a time. Allow at least ten days and then when examining to see if the queen is accepted, do so carefully. If eggs are found, remove no more combs but close quietly and leave alone until the new brood is well established. Then it is no longer necessary to use more than ordinary caution.

When the honeyflow opens, let it mature for about a week, with an empty super on the top brood; then withdraw the separator screen; put the two brood nests together, with all supers at the top. Surprisingly the two queens often continue working for some time in their respective bodies until one is disposed of by the bees. Most often the new queen is the one that remains. We have found in our short experience with this plan that the crop of the two-queen colonies is increased on the average about a hundred per cent, without much cost other than the cost of the second queen.

E. S. Miller,

Indiana

After having tried the two-queen system for 2 years with a considerable number of colonies, I do not think it increases production profitably. A two-queen colony is just two colonies, one on top of the other with the queens kept separate and the workers allowed to intermingle. I found that in a number of cases the queens disappeared. More labor is required in manipulation and supering unwieldy hives and it is difficult to feed in case that is necessary. While a double colony may, if united later, produce more surplus than one with a single brood nest, it is doubtful whether it will exceed or even equal that of two colonies side by side or where one is placed above the other and separated by means of a wire screen, as shown in May ABJ, page 236.

The advantage comes from uniting at the beginning of the main honeyflow, which insures a double working force with only one lot of brood to feed. A normal colony consumes approximately 50 lbs. of honey a month in brood rearing, which means a lot of surplus lost and which may be saved by doubling. To carry a two-queen colony through the honeygathering season is definitely unprofitable, but building up booster colonies in early spring by dividing

or by means of package bees or with nuclei, and uniting before the main flow will double your crop.

Paul Ekblad,

Wisconsin

I have tried two-queen colonies for three years and I think it is a good way to increase the honey production of a colony. Last year my single-queen colonies averaged 110 pounds of honey and my two-queen colonies averaged 225 pounds. That is twice as much from the two-queen colonies.

The two-queen system like all other systems, has its disadvantages as well as its advantages. The biggest disadvantage is all the extra work as it is quite difficult to lift heavy supers on and off when the hive is piled so high.

One of the advantages of the two-queen system is that the hive is requeneed every year. That is probably why swarming is not such a problem.

My two-queen colonies always come through the winter in the best condition with the most brood in early spring. That is probably because they have the most bees in the fall, and the most pollen stored in their combs.

Wayne Keller,

Nebraska

There is no doubt that two-queen systems increase production, but

only a few are efficient and, therefore, profitable. I can only attest to the efficiency of the one I use.

I once discovered that I could set brood, bees and queen of one hive over that of another, and that if the bees didn't kill each other, both queens would be accepted. It is understood that the lower queen is in a more precarious position, but if she is young and sound there is little danger, provided robbing is not severe. Robbing encourages balling of queens. I also discovered that queens need not be separated by two excluders for all practical purposes. I now use a second queen and brood chamber as a bait to induce work in supers, or to strengthen one unit of the two. Besides affording a convenient method of making increase and utilizing available supers to best advantage, the two-queen method of operation keeps the individual colonies stronger and overcomes the swarming impulse. While some will swarm, either because of uncorrected hive conditions or both queens being fit for supersedure, it seems that a strong queen not only overcomes the swarming resulting from supersedure, but also encourages the maximum output from the failing queen. Possibly the disappearance of the lower queen might often have occurred though the units were left separate. If a queen fails, she may be replaced.

It is easy to see that my method of using but one excluder, and not worrying whether the hive was reduced to one queen or whether the supers were added "thus and so," entails no extra operational procedure. I simply use five stories where I think there are two queens, placing the stories so they will be occupied. Otherwise I use the customary four stories. When supers are full, I extract. It is very little trouble for me to tell which are honey-supers, and since the chambers do not have to be put back in a particular order, I may exchange a couple frames of brood in a super for honey at the edges of the second brood chamber without a material loss of time and no distraction.

In the fall I have colonies hanging out of four or five stories, plenty of pollen and late stores (such can be extracted where detrimental). If I desire to keep more than one queen, I simply insert a window screen between the two queen compartments that are heavy for winter, and the combined clusters are certain to winter. The cost of extra equipment (Please turn to page 289)

Advice to Beginners

by Frank E. McLaughlin



I have chosen as my topic for this issue, a letter from Palmer L. Faragher, of Watertown, South Dakota. Mr. Faragher is a flight instructor, and charter pilot by trade, and judging from his letters, a beekeeper at heart. Mr. Faragher is planning for the future. It is a bit early to think of wintering, but it is always advisable to plan ahead.

Mr. Faragher asks: 1. "Do bees die from constipation, if they cannot fly every 30 days?"

Bees do not die from constipation. It has been said bees have wintered successfully, when they did not have opportunity for a cleansing flight for the entire period of the winter.

2. "How much honey is required to winter a colony of bees?"

I personally use double brood nests, or what is known as a brood chamber, and a food chamber. At the beginning of the winter, the main cluster of bees are in the brood chamber, or lower hive body, with maybe one or two partially filled combs of honey in the center, and the remainder of the combs, filled with pollen, and some honey. The top hive body, or food chamber is completely filled with well-ripened honey. Bees should be checked for stores, at the earliest convenience in the spring.

3. "Is it natural for bees to become chilled and fall to the ground, when they fly out at 40° temperature?"

If the temperature is too cold when bees fly out, naturally they become paralyzed and are not able to return to the hive, and they will form a small cluster and stay out and starve. Most bees will not fly when the temperature is that cold. If bees fly out and fall when the temperature is 40°, they

are most likely old bees, as they cannot stand cold as well as young bees. I have seen my bees fly at 38° and return to the hive all right. I have seen them get moisture from the snow. But sometimes, when the sun is shining on the hives, the bees evidently think it is warmer outside than it is, and a few will fly out and be unable to fly back. But they should be allowed to fly, if wintered outside. Although you may lose a few, a good prolific queen will carry on enough rearing to keep the colony going.

4. "Should hives have a top opening?"

I believe in top ventilation, which permits the accumulation of moisture in the hive to escape. Mr. Faragher, you say when you opened a hole at the top the bees boiled out and fell in the cool air. That was because you disturbed them when the temperature outside was too cold for them to fly. If top bee escapes are used, bore a 1/2 inch hole two inches below the top of the hive. Lots of beekeepers use the top entrance and it was practiced by some beekeepers 75 or 80 years ago. It is good policy to have some top ventilation, at least, for if ice should close up the bottom entrance, the bees would smother if some other means of getting air was not provided. I use screen wire lids, with ventilators on top, and the regular hive lid on top of the ventilators, which does not allow the bees to use the ventilator holes as an entrance, but gives them ventilation from the top of the hive. I am speaking of bees wintered outside.

5. "When bees are wintered in a basement, do they fly out for their cleansing flight, and return to the hive?"

Beekeepers are more against

wintering indoors than they were years ago. Wintering in a cellar or basement will not be successful unless the temperature can be controlled. If it gets too warm the bees fly out and do not get back in the hive, therefore they die. If the temperature gets too cold it is not good for the bees either. There should be controlled ventilation of air, and the cellar must be kept very dark, day and night. I would say the temperature at all times should be around 45° with full circulation of air. It seems the best policy, even in the north, to winter outdoors, if a cellar made especially for wintering bees is not available. Where the temperature gets far below zero, sometimes it is the best policy to kill the bees, and buy packages in the spring.

6. "Should I use a shed for wintering, with open window on the south?"

Personally, I would not use the shed at all, unless it could be made completely dark, without a ray of light showing any place, and temperature, moisture and ventilation could be completely controlled.

When wintering in a specially made cellar, the colonies can be placed in tiers, one on top of another. The bottom boards are removed, and 2x4 stringers are put between the top and bottom hives. This permits dead bees to fall on the lids of the colonies below, which can be brushed out at regular intervals.

We are glad to hear sulfa was recommended to you in your state. I am a firm believer in the use of sulfa as a prevention of foulbrood, and believe it has many other benefits to the bees.

Comb Honey

From An Artificial Honeyflow

by A. W. Woodrow

U. S. Department of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine *

RECENTLY there has been considerable interest in the production of more comb honey as a means of increasing the income from bees. While the demand and price for comb honey have remained good, many beekeepers cannot produce it because their honeyflows are too light and too short. Some honeyflows end abruptly, leaving the beekeeper with many unfinished comb honey sections which are unmarketable. This was the experience in central Ohio in 1948 and 1949 after a complete crop failure in 1947.

In 1948 the main honeyflow from alsike clover lasted about three weeks. New combs were drawn and filled with honey, and some honey was sealed. Then the honeyflow stopped abruptly and the bees ceased their work in the supers. When extracted, a considerable portion of the honey was not marketable because it was too thin. The situation in 1949 was very similar, although the honeyflow, which began June 1, did not last so long as in 1948. Weather during the dandelion and fruit bloom periods had been ideal for bee activity, and as a result the hives were full of bees.

After about a week of good honeyflow the partly filled extracting supers were removed from the hives of five of the strongest colonies that had shown no inclination to swarm, the brood nests were reduced to one story, and comb honey supers were placed on them. The bees entered the sections immediately and began to draw out the foundation. Their work was interrupted the next day, however, by a period of bad weather which brought an end to the honeyflow. Comb honey sections contained only partly drawn comb, and extracting combs contained thin, unsealed honey.

Some of the thin honey extracted in 1948 was fed back to the bees on

the chance that the water content might be reduced in the process of storing it in the combs again. This did not work out as expected, because the honey was taken from the feeders slowly and much of it was used to expand brood rearing in the two-story brood nests. The yield of extractable honey from the process was disappointingly low.

Two strong colonies which had produced some comb honey earlier in the season were then chosen for an experiment in producing comb honey by feeding extracted honey. Because of the greater demand and higher market value of comb honey, it was felt that this might be profitable even if considerable honey was lost. Each colony was given a comb honey super and a feeder above it in an empty hive body. The feeder was made of a 5-gallon honey can which had been cut lengthwise into two parts, each $4\frac{1}{2} \times 9\frac{1}{2} \times 13\frac{3}{4}$ inches. It was supported over the sections by three strips of wood about $\frac{1}{2}$ inch thick, so that the bees could pass beneath it into all parts of the super below. Inside the feeder was placed a piece of curved screen about 8×12 inches from a package-bee cage, and then it was filled with undiluted extracted honey. Six of the thin wooden covers about 5 inches square, also from package-bee shipping cages, were placed upon the honey to prevent the bees from drowning. The feeder touched one or more sides of the empty hive body so that the bees could enter it easily. As the honey became low, the screen underneath the wooden floats supported them, allowing the bees to pass beneath and remove all the honey.

The feeder was highly satisfactory because of the speed of feeding and the small loss of bees. Its chief disadvantage was that it could not be refilled until completely emptied by the bees. By using two slightly smaller feeders to be filled alternately, this trouble may be avoided.

The cover was blocked up to furnish ventilation.

In 1948 approximately 200 sections of comb honey were produced by feeding extracted honey. Most of them were of first quality. Although no exact record was made of the quantity of honey fed, a fair yield of good comb honey was obtained from honey that otherwise could not be used.

In 1949 the same general plan was followed. Only one colony was used, and the process was made as nearly continuous and as rapid as possible. This colony was fed 284 pounds 10 ounces of honey, as shown in the tabulation below, and 187 marketable sections were removed, although not all were of first quality. More first-quality sections in the last super could have been secured by feeding 10 or 15 additional pounds of honey.

The production of approximately two sections for 3 pounds of honey fed appears to be a profitable procedure with the existing price differential between bulk extracted honey and comb honey. Some honey was stored in the brood nest of the colony, and brood rearing was expanded during the feeding period. In both seasons other colonies lost weight during the feeding period.

Schedule of Feeding Honey, 1949

Date	Honey fed (pounds)
June 26	20 1/2
28	21 1/2
July 2	22
4	24 1/4
9	23 1/2
14	22 1/2
16	22 1/4
21	23 1/2
26	21 3/4
28	19
31	7
Aug. 2	19 1/4
5	16 1/2
10	14 1/2
13	13 3/4

Best results were obtained by feeding rapidly and by crowding the colony. Usually a feeding of 20 pounds or more was taken down in 2 or 3 days, the time depending somewhat on the stage of development of the sections. The most uniform sections were obtained when the colony had only a single super to work on. When it was nearly completed, another was given underneath, just above the brood nest. Sometimes the supers had to be left on for several days after they were filled with honey to permit the bees to complete the sealing. The feeder was allowed to remain empty for about a day immediately before a completed super was removed to avoid having thin unsealed honey around the edges of the sections. When feeding was interrupted for several days with a partially filled

* In cooperation with the Ohio State University and the Ohio Agricultural Experiment Station.

As We See It

THE HORSE - AND - BUGGY DAYS ARE GONE—The beekeeping industry is at a crossroad in more ways than one. It is faced with revolutionary changes that are apt to shake the very foundation of beekeeping. We predict that many individuals within the industry will be caught napping—completely unprepared to assay the changing situations. Others will be alert to conditions and ready to take full advantage of them.

Pollination as an agricultural practice is here to stay. There are two possible approaches for the beekeeper. (1) To turn to pollination as a paying business without regard to the production of honey. (2) To combine honey production with pollination, something which is feasible for most beekeeping areas. The first approach requires expensive equipment for moving bees and for seed harvesting, and offers great possibilities for those who can afford to risk capital in such an enterprise. The latter is the ideal approach for the average commercial beekeeper—to get a crop of honey while planning and building colonies for later polli-

nation work, or perhaps to double up colonies after flow for pollination.

The handling, extracting, and packaging of honey must and will be improved from the standpoint of efficiency and sanitation. It is time that we clean up as an industry. A few states already have sanitation laws and the Federation has appointed a committee to seek a reasonable and practical approach to this problem. In several instances, the necessary equipment is not even available to the industry. A few wide-awake beekeepers have seen the "writing on the wall" and have modernized and streamlined their honey houses and honey handling methods, or currently are making plans for so doing.

Businesslike methods of processing honey, competitive-brand advertising, improved distribution, and modern methods of merchandising, as well as the creation of new honey products, hold the key to the success of marketing the honey crop. Old methods must be tossed aside and new ones found. Only the enterprising packer, cooperative, or dealer will find a profitable future in honey as a business. The horse-and-buggy days are gone.

super, the bees sealed some sections before they were fully drawn and of the desired weight.

Continuous feeding appeared to produce very nearly the same conditions within the colony as a natural honeyflow. However, development of sections was slower than during a heavy honeyflow, somewhat less honey was stored in the brood nest, and no preparations were made for swarming. The bees entered the sections and drew out the foundation without hesitation. Delicate white beeswax was freely secreted and comb building proceeded at a high rate. Some bees clustered outside in hot weather, and a heavy cluster of gorged bees usually hung from the inner cover above the feeder. Here they built comb as well as on the sides of the empty super. They also built comb on the metal side of the feeder, using it like comb foundation as the midrib of the new comb.

Other beekeepers have produced comb honey by feeding extracted honey. A discussion on this subject appears in some of the older editions

of "ABC and XYZ of Bee Culture."

This practice has usually been considered unprofitable, but at a time when price and marketing conditions are especially favorable for comb honey, while forage conditions are unfavorable for its production, the procedure may be profitable to some beekeepers. It is one method of finishing sections which are only partially completed at the end of a honeyflow that stops abruptly. Considerable loss may be avoided if feeding is started promptly before the unfinished sections become travel-stained. It seems entirely practicable to produce 200 sections per colony if the colonies are carefully selected and serviced regularly so that the sections are developed rapidly. Colonies which have recently passed through a honeyflow are in particularly good condition for comb building and honey storage in sections. The labor requirements are no greater than for comb honey production during the honeyflow.

The comb honey produced by feeding could not be distinguished from that made during a natural honey-

flow, its quality depending on the quality of the honey being fed and the rapidity of feeding. Nectar available in the field from undesirable sources at the time of feeding may reduce the quality of the finished product. The most serious drawback to the procedure is the tendency for comb honey produced in this manner to granulate more quickly than that produced on a natural honeyflow. This is due to the introduction of honey crystals and to agitation in the process of extraction and feeding. When crystals are present it is necessary to liquefy the honey completely before it is fed. If the honey is damaged in heating, of course the quality of the comb honey is lowered. The feeding of honey from new combs reduces the danger of granulation. Honey that granulate rapidly should not be used.

It is extremely important that there be no American foulbrood in the apiaries from which the honey is obtained, or in which it is fed, because of the danger of spreading the disease.

Beekkeeping



THE year 1942 will long be remembered by the Timson family. That was the beginning of beekeeping for us. We started with two colonies, stepping up each year thereafter until we had reached 42 colonies.

We believe our bees are almost as important as anything else on the farm and certainly the most important thing when it comes to growing legume seed.

The first year (1942) we ordered two colonies of bees from Walter T. Kelley and put them in the orchard with the thought that they would make us some honey to relieve the shortage of sugar that existed at that time. It was these two colonies that started us off on what we think is the right track for successful farming.

Those first two colonies were pleasant enough to stay with us while we learned to take care of them. At that time we thought the bees would wait until we got the corn plowed or hay made or whatever came along to do on the farm. This was the beginning of a family beekeeping enterprise. My mother, Mrs. Elmer Timson, Sr., suggested that she would do the reading and would tell Dad and me what should be done so we wouldn't have to take so much time away from our farm work. This resulted in Mother going a little farther and even going to the hive and seeing what was needed and then Dad or I would do it, which didn't take more than ten minutes when we were busy with other farm work. It was through this reading that Mother found that it was thought that honey bees did a good job pollinating medium red clover.

In 1945 we had stepped our colonies of bees up to 30 strong ones and a

The top picture shows hives spaced along a field of Emerson red clover for pollination.

In the two middle pictures strong colonies are set in or on the edge of fields of red clover. On the Timson farm bees have increased clover seed yields from tens of bushels to bushels. The more bees kept, the greater the yield.

Below—Elmer F. Timson, Sr. with tractor and combine. Seed is carefully harvested.

and Good Farming

by E. F. Timson

few small hives. This was still a family year; Dad and I had put some new equipment together during the winter months and Mother got it ready in the honey house to be put on the hive. And we must not forget that Mrs. E. F. Timson was very busy seeing that we were all well fed so the cooperative work wasn't slowed up.

Mother did most of the light work while Dad or I did the heavier work.

By this time we felt we were getting enough more clover seed to pay us well for the extra work. So from then on the bees were just part of the farm.

It was this pleasant year of 1945 that our state bee inspector, Mr. Joe Hermann, of Manchester, asked us if we would like to cooperate with Iowa State College at Ames with our work and interest in honey bees as pollinators of red clover. We were very happy to be able to do this and were much happier after we had met Dr. I. J. Johnson, now head of field crops, Dr. C. P. Wilsie, research professor of the agronomy department, Dr. O. W. Park, research professor of apiculture, and last but not least, Professor F. B. Paddock, state apiarist. That year and the two years following (1946-1947) took all

the guess work out of bees as pollinators of red clover for us. We had increased our clover seed from tenths of bushels to bushels by this time and the more bees we kept, the more seed we seemed to get. We feel that if we, the people of Iowa, save our soil there will have to be more clover, alfalfa, bird's-foot trefoil and grasses planted and so there will need to be more and more seed grown. We feel one of the best ways of producing legume seed is to have some bees on every farm or at least close enough to get a good job done.

This year we ran into a problem and we thought we had all the problems solved. This problem was sweet clover growing along the railroad and highway. This sweet clover was only about 20 or 30 rods from our apiary and was in full bloom at the same time our second crop clover came into bloom. Well, this is something one wants to watch. This year it would have been better if we had cut our clover hay crop a week later and then the sweet clover would have been through blooming by the time our red clover came into full bloom.

We believe in mowing the hay crop early and by early we mean June 1 if at all possible. The hay

has more protein at this stage and it gives the seed crop a better chance. The next step is to harvest the seed carefully. It isn't the bees' fault if they pollinate the crop and you get a seed set and then you throw it away. We go just as slow as the tractor will idle in low gear. The motor on the combine keeps the speed of the cylinder turning at 1600 r.p.m.

We had a quarter acre of bird's-foot trefoil that we harvested for seed and after losing about one-half the seed we still received 36 pounds of re-cleaned seed. So it is easy to see what the bees did for us on that. The patch was just a steady hum when it was in bloom. We hope we will know more about when to cut our trefoil next year so that we can get nearly all the seed the bees are responsible for setting.

Of course we all know we can greatly increase our ladino clover seed yield by having bees on it.

There has been a lot of talk in this area of hiring bees for pollination without being obligated to the beekeeper. This is hard for us to answer, as having bees ourselves and farming ourselves we feel there is a great obligation both ways, especially to the beekeeper. It seems to me it is almost impossible for him to put bees out on a red clover field which we all know is a poor honey supplying crop, without some kind of reimbursement from the farmer. I am sure that in another year or two there will be some very good methods worked out that will be practical to follow.

Iowa.

How-to-do-it

Burr Comb Pail

While going through a yard getting ready to remove supers, I learned the advantage of a covered pail into which I could scrape burr combs. Often considerable honey is built between supers and if left to drip or leak can start a robbing festival. The type of covered pail used in the kitchen with hinged lid and a foot pedal to lift the cover will soon pay for itself in the bee yard, and can be set on the truck and emptied upon return to the honey house.

Next time I buy one, I'll keep the new one wrapped until it gets to the yard, and avoid having it swapped for the one in the kitchen!

M. M. Moore, Iowa.

As We See It



PROFIT THROUGH SERVICE. The position of the beekeeper is unique in the fact that the greater his prosperity the larger the returns that come to the farmers of the community. The presence of his bees in the orchards or clover fields insures larger crops of seed or fruit. For every dollar that his bees bring to him in the form of honey they bring ten or more to the owner of the pastures where they gather the harvest.

Scientists tell us that the honey bee is one of the oldest species of living animals and that it has survived from very ancient times, long before the appearance of mankind. We may assume that it has survived because it has rendered an indispensable service instead of living at the expense of other creatures.



The Origin and Evolution of the Honey Bee

by Dr. Melville H. Hatch

Continued from May

The probable stages in the evolution of the honey bee that I have been describing for you seem to have occurred in the early and middle portion of the Age of Reptiles, from 175 to 110 million years ago. The particular insects I have been telling you about are living today, but the sort of hymenopterous habits they represent probably came into existence at this remote geological period.

About two-thirds of the way through the Mesozoic Era—this is the technical name by which geologists call the Age of Reptiles—an important event occurred in Earth history. For millions of years the Plant Kingdom had been specializing on giant horse-tails, tree ferns, seed-ferns, and conifers. And then, all of a sudden—at least it is sudden in the perspective of the geologist—the great group of the flowering plants spread over the surface of the land. The first flora of flowering plants is known from the Lower Cretaceous of Greenland and some have suggested that it was under such relatively rigorous conditions that the superior reproductive mechanisms of the flowering plants first proved their worth. Previously the lands had been occupied by woody-stemmed trees and shrubs. Now more plastic herbs and grasses came into existence and the stage was set for further advances among the animals.

In particular, the evolutionary history we are interested in could never have been told had not this particular bit of plant evolution taken place. For, without the grasses, man, perhaps, could never have become civilized. Deprive man first of his grass foods—wheat, rice, corn, barley, oats—and of those animals that feed on grass—cattle, horses, sheep, goats—and where is he? Civilization is probably impossible. On the other

hand, deprive the bee of its pollen and nectar—and bees would never have come into existence.

The transition, then, from the insect-eating solitary wasp to the pollen- and nectar-eating solitary bee was a momentous one. Certainly the protein-rich supply of food provided by the coming into being of the flowering plants could not have long remained neglected by the insects. And the wasps, who had already proved their biological ingenuity by their insect-eating ways, were the insects that provided the exploiters of this new source of food. The transition in food habits is heralded by the propensity that many wasps have for visiting flowers and feeding on their products. What happened, then, was that some unusually enterprising wasp took to feeding not only itself but its larvae on food obtained from this source.

From their wasp ancestors bees received the powerful wings, the large finely faceted eyes, and the sensitive antennae necessary for searching out the flowers in the first place. The labium has become especially elongated for lapping or sucking up the nectar from the nectaries of the flower. The anterior portion of the alimentary tract is enlarged in the female to form a bag-like distensible crop for the transportation of the nectar back to the nest, and its walls are muscular, enabling the bee to regurgitate its contents. The regurgitated nectar is known as honey, because, during its sojourn in the crop, it has become mixed with minute quantities of an enzyme, causing its cane sugar or sucrose to become converted into levulose and dextrose.

The more primitive bees, of which *Prosopeis* may be a living example, may have transported pollen as well

as honey in the crop, and may have been very wasp-like in general appearance. Eventually, however, as in the overwhelming majority of living bees, the body became thickly covered with plumed or feather-like hairs. The function of these was to rub against the stamens as the bee explored the flower and to brush off a quantity of the pollen. Later the insect, if a female, combs itself with its legs, moistens the pollen with a little honey, and attaches the resulting mass to the outer surface of the tibiae and tarsi of the hind legs. Here an arrangement of long stiff hairs forms a pollen-basket or corbicula in which the pollen is transported. The male is not concerned with feeding the larvae. He possesses plumed hairs, but has not developed the devices for transporting food.

These remarkable mechanisms in the bee have had their repercussions in the evolution of floral structures. The bees and other insects in going from one flower to another provided a method of cross fertilization that was much more efficient than cross fertilization effected by air currents. The result was that many plants under the influence of natural selection gave up effecting their reproduction by the use of air currents and have become exclusively dependent on insects. Those species of plants exhibiting the brightest colors and providing the richest stores of nectar and pollen would then be most successful in their reproductive processes—and so the evolution of flowers and bees went hand in hand, to the mutual advantage of each.

And wherefore these multitudinous adaptations on the part of the bee? Primarily to supply a tiny brood chamber hidden away somewhere with enough food to accomplish the

As We See It

WHERE TO STOP THE FLOOD—One of our correspondents writes deprecating the millions of dollars that are being proposed and spent for flood control. "The place to stop the flood is on top of the hill," says our subscriber. Pretty wise words.

I look out over the hill and down upon the Mississippi River and visualize the millions that have been spent for levees and dams. Twenty-one dams have been built along this river for water navigation and for flood control. But these basins are filling up rapidly with rich farm land.

My home and garden are up on top of the hill. That is where the rich soil comes from. Bits of loose soil from my garden and from that of my neighbors trickle down in rivulets with every good-sized rain. Multiply that a million fold and we have the uncontrollable stream with its load of silt.

We cannot see the overall picture for the moat in our own eye. Why not personalized soil conservation by stoppage of this wash into thousands of Podunk Creeks, as the Soil Conservation Service wants us to do, rather than a Missouri Valley Authority, starting at the tail end instead of the head?

According to Dr. W. C. Loudermilk,* formerly assistant chief of the Soil Conservation Service, scientists have shown that

land in fallow on an 8 per cent slope without cropping lost each year an average of 29 per cent of soil. This means that in 18 years, 7 inches of soil (the average depth of top soil) would be washed away to subsoil. Under continuous cropping to cotton, it would take 44 years to erode 7 inches of soil. Rotation reduced but did not stop erosion so that it took 109 years to lose 7 inches of topsoil. But if the land were kept in grass and legumes, it would take 96,000 years to wash away the 7 inches of top soil—a rate that certainly is no faster than soil is formed. Dr. Loudermilk continued, "Here in a nutshell, so to speak, we have the underlying hazard of civilization. By clearing and cultivating sloping lands—for most of our lands are more or less sloping—we expose soils to accelerated erosion by water or by wind and sometimes by both . . . Now is the time while we still have much good land still capable of restoration to full or greater productivity, to carry through a full program of soil and water conservation. Such is necessary for building here a civilization that will not fall as have others whose ruins we have studied."

* From "Conquest of the Land Through Seven Thousand Years," by W. C. Loudermilk, Soil Conservation Service, U. S. D. A., S. C. S. MP-32, February 1948.

development of the larva that will emerge from the egg that will be layed therein. All of life is oriented towards its own perpetuation, and the bee is no exception.

Famous as the honey bee is for its marvelous society, ninety-five percent of the existing species of bees are solitary creatures living life-histories essentially similar to the *Sphex* wasp already described. This is in marked distinction to the wasps, where a considerable proportion of the species are social, and especially to the ants and termites, where all the living types live in societies. The difference is that the burrows that the female bee excavates, instead of being stocked with one or several insensitized insects, are stored with pollen, and it is upon this that the legless bee grub grows to maturity. In this connection I recall a metallic blue bee about the size of a honey bee that for several years excavated

its burrow in the mortar between the bricks right by my front door. First I would notice it making trips in and out, either excavating the burrow or bringing in supplies of pollen. Then, of a sudden, the burrow would be plugged with mud, and at some later date, when I wasn't looking, the young bee would emerge and the burrow await reoccupancy.

The precise transition from the solitary to the social habit is conjectural, but there are several forms that have habits that are suggestive of what it may have been. Wheeler quotes the observation of Dr. Hans Brauns on several South African species of *Allodape* (*The Social Insects*, pp. 84-89). It appears that these bees usually nest in the stems of iris, rose, *Rubus*, etc., that have been hollowed out by other bees or wasps! The female of a certain rather diminutive species of this genus, after having fixed up a hollow stem to her

satisfaction, lays an egg that is about one-third as large as she is. She then proceeds to gather enough pollen to nourish the larva through to its pupation, whereupon she deposits a second egg right above the first and gathers food for it. Such habits represent the beginning of social life, because the mother remains active in the presence of the developing larvae.

A slightly more advanced stage of subsocial evolution is represented by *Allodape pringlei* Cameron. This bee attaches her eggs to the interior of the stem in perpendicular rows of as many as ten or more. After the eggs hatch, the larvae gather in clusters, and the mother nourishes them by placing food in the space between their heads where they can all feed on it together. A stage has at last been reached where the parent is tending the living larvae.

(Please turn to page 289)

Picture Contest

Now that you're spending a lot of time in the bee yard don't forget to take along that camera and make a try for winning the Cover Picture award of ten dollars, or the Break Page prize of five dollars. Entries in this contest are slowing down, so your chance of being a winner is even greater. Don't forget that not more than two pictures by the same person will be used during the year for the Cover, and not more than two for the Break Page. All payments will be made following publication.

The pictures you send should be glossy prints 5x7 inches or larger, as small pictures do not enlarge well in making engravings. If you have a good small picture, send the negative. If it can be enlarged, it may do.

Your pictures can be either posed or natural, candid shots. They must be sharp and clear with good detail and composition. We want photos of unusual interest dealing with some phase of beekeeping or related subjects.

Don't forget that Camera when you go to your apiary. Good luck!



The Cover Winner

D. M. Cuthbertson

Brighton, England

Cuthbertson says, "These hives must appear quite foreign to American readers as they are not like those to which they are accustomed. I have no recent picture of myself or my bees and the lot I am sending are from previous years.

"I am a Scotsman living in England. In 1941 as a member of the Inverness Battery of the Royal Horse Artillery, in the campaign against the Turks, I contracted dysentery in the desert and was brought back to England for treatment. I was in and out of the hospital for a long time and my father was told I had six months to live. There was the

chance that, if I lived in the country with some light occupation, I might become better. I knew nothing then about bees but father gave me 'The Lore of the Honeybee' by Ticknor Edwards which made me want to know more, so I got Simmons' 'Modern Bee Farn' and then other works. When it was suggested that I should keep bees I did not need much prompting. My wife and I took a cottage in the country and began keeping bees. I was soon appointed part time Instructor in Beekeeping for the Bucks County Council. I have two demonstrations a week during the summer and two lectures

in the winter. Before this I passed an examination for proficiency in beekeeping set by the British Beekeepers' Association.

"This all came to an end when my health failed again and I had another long spell in the hospital. Out again and able to attend to the bees; then the hospital again. So I have never been able to keep bees on a commercial scale but I would not be without them. When once you know bees and when you realize how much there is still to learn, you feel that you can never give up keeping them. Only one who feels this spell can know what it is and how much it means.

"The children in this cover picture are my own but they are now grown up. How the years pass! Now, years later, I can say again that my health is much better than it was, probably thanks to the bees."



Break Page Winner

**A. L. Gehrels,
Texas**

A. L. Gehrels entered this picture of his father, John A. Gehrels, of Cibolo, Texas. The picture was taken during the past extracting season, and surely most of us look forward hopefully to the chance of having hundreds of combs of honey as good as Mr. Gehrels holds in his hands.

Past seventy years old, he still works as hard as ever with seven hundred colonies of bees. He has done nothing else for over forty years and his story is pretty typical of the old time Texas beekeepers. He has his own ways to which he clings as most of us do. All the old timers know John

Gehrels, H. B. Parks, Bulay, the Weavers, the Burlesons, and Alex, to name a few.

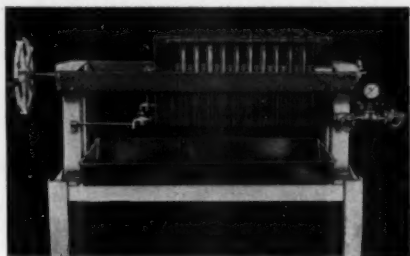
The son writes, "I am his only son and worked with him many years; still do when I have the time. Now though I have my own business (Advertising Art, San Antonio) and photography comes in handy in my work. The photo was made with a Speed Graphic."

CELLULO All-Purpose HONEY FILTERS

Used with CELLULO FILTER PAPERS

**EASY, POSITIVE
ECONOMICAL
FILTERING**

Helps step up the value of your product. Assures uniformity of color, flavor, clarity and body.



FREE

Write for instructive folder on HONEY FILTERING. No obligation

Most efficient all-purpose honey filter. For all capacities up to 40 pound per minute. Simple, compact, easy to operate. For best results use with Cellulo Filter-Papers. Available in various sizes to fit your production requirement. Write for folder on "The Role of the Honey Bee."



THE CELLULO CO., SANDUSKY, OHIO

Manufacturers of Filters and Filter Papers since 1919

MERRILL'S FIRST QUALITY—Italian DR or Regular Stock

38 years' selective breeding makes them good as the best.

Requeen while they are cheap

First quality untested queens	\$.50	Any number
Tested queens	1.00	
2-lb. packages with queen	2.00	
3-lb. packages with queen	2.75	

Prompt delivery and
100% satisfaction

MERRILL BEE COMPANY

State Line, Miss.

Italian Package Bees & Queens

Write for quotations and particulars on our LINE-BRED ITALIANS noted for their prolificness, vigor and vitality.

2-lb. package with queen	\$2.75
3-lb. package with queen	3.75
4-lb. package with queen	4.50
5-lb. package with queen	5.50
Queens	.50

B. J. BORDELON APIARIES, Moreauville, Louisiana

QUEENS

3-Banded Yellow Italian Queens. Very good strain of bees, gentle to work with and very good honey gatherers.

QUEENS 55c EACH

QUEENS

Golden Italian Queens. Very gentle strain of bees, beautiful yellow in color and very good honey gatherers.

QUEENS 65c EACH

QUEENS

BREEDER QUEENS \$5.00 EACH

All queens are shipped air mail and we guarantee live delivery. Above prices are from June 1st to October 1st.

ALVIN J. DUCOTE, Hamburg, La.

TEXAS ITALIAN QUEENS for HONEY PRODUCERS

PRICES	1 to 24	\$.75 each
	25 to 99	.70 each
	Tested queens	2.00 each
	Queens clipped or Air Mailed at no extra cost.	

Queens are reared from flowers of the Rio Grande Valley, are caged and shipped the same day and safe arrival is assured. Queen breeders H. J. Barnett and M. G. Smith.

BOX 895

RIO GRANDE APIARIES PHARR, TEXAS

Allen Latham's BEE BOOK

The first and only book ever written by the great master of beekeeping, published December, 1949. 200 pages. 27 chapters. Handsomely bound in cloth and sent to you postpaid in special protective container.

\$2.95 Postpaid

HALE PUBLISHING COMPANY
Hapeville, Georgia

Hardy Northern Queens

Genuine leather-colored queens and bees that excel in honey production and pollination. We have shipped this same strain of bees to many parts of the world in the last six years without complaint or dissatisfaction.

10-frame colony, tested queen	\$15.00
3-lb. package with young queen	4.75
Untested queen	1.00
Tested queen	2.00
Health certificate with each shipment	

**BARGER'S APIARIES
CAREY, OHIO**

Tried in Service and Found Good

IMPERIAL ITALIAN and Hybrid	
Caucasian Queens	\$.80 ea.
2-lb. package with queen	2.50 ea.
3-lb. package with queen	3.40 ea.

**THE COFFEY APIARIES
WHITSETT, TEXAS**

Attention—

PACKAGE BEE BUYERS

Italian Bees and Queens

full weight, prompt shipment, young queens, live arrival guarantee.

Health certificate with each shipment. Give me a trial. You will be satisfied.

2-lb. with queen	\$2.25
3-lb. with queen	3.15
4-lb. with queen	4.00
Extra queens	.75

Raymond McFarling

SHANNON, MISSISSIPPI

American Rabbit Journal Shows the Way to Success

Gives the latest news and views of the rabbit world—an illustrated monthly magazine of general and educational features. 1 year, \$1.00; 3 years, \$3.00; sample 15c.

**American Rabbit Journal
DEPT. S. WARRENTON, MISSOURI**

Yellow Italian Queens

UNTESTED—50c EACH
PREPAID AIR MAIL—55c EACH
Use money order for small orders

**PLAUCHE BEE FARM
HAMBURG, LOUISIANA**

Renew Your Subscription

THRIFTY QUEENS

3-Banded Italians Only

Lots of 100, \$50.00
Smaller lots, 60c each
Package bees available to
July 1st
REMEMBER—THRIFTY BEES
are GUARANTEED to please
W. J. FOREHAND & SONS
FORT DEPOSIT, ALA.
Breeders Since 1892

Howard Weaver's CAUCASIAN QUEENS AND PACKAGE BEES

	Queens	With Queen	
1 to 24	\$1.00	2-lb.	\$3.50
25 to 49	.85	3-lb.	\$4.50
50 and up	.75		3.25
			4.00

For 20 years a partner in Weaver Apiaries

HOWARD WEAVER
NAVASOTA, TEXAS

Bee Hives—\$3.75 Each Empty Supers—75c Each

Hives are standard 10-frame size and consist of

- 1—Reversible wood cover
- 1—Hive Body
- 1—Reversible Bottom Board

Supers are available in 8- or 10-frame size (specify)

All equipment is shipped completely assembled with all exposed surfaces painted with heat-resisting aluminum paint. All equipment is machined from Kiln-Dried Southern Yellow Pine.

Shipment can be made by railway freight, railway express, or truck freight. (Please specify which).

All prices F. O. B., Belton, S. C.

ORDER TODAY

DIXIE WOOD WORKS
BELTON, R. 2, SOUTH CAROLINA

Select 3-Banded Italian Queens

1 to 11, 65c each

12 or more, 60c each

Health certificate, safe arrival and satisfaction guaranteed. No extra charge for clipping.

JOHN C. HOGG
TIFTON, GEORGIA

Renew Your Subscription



KELLEY—"The Bee Man"

QUEENS

IMPROVED HYBRID CROSS

These bees appear to be light, 3-banded Italians and are gentle, easy to handle and stay on the combs. However they are of much improved quality and lay frame after frame of solid brood

YOUNG IMPROVED LAYING QUEENS **75c ea.**
BY PREPAID AIR MAIL

LOTS OF 25 AND UP—65 CENTS EACH

WALTER T. KELLEY CO. Box 210, Paducah, Ky.

THREE-BANDED ITALIAN BEES AND QUEENS

We are trying to keep our prices in line with the low prices of honey this year. We can supply you with the same high quality bees and queens that we have been producing the past TWENTY YEARS. Prices as follows:
2-lb. package with queen \$2.25 New light weight packages—overweight—disease
3-lb. package with queen 3.15 free. Guaranteed live delivery at your station.
Untested Italian queens 75c For queenless package deduct price of queen.

LUCEDALE APIARIES

Lucedale, Mississippi

FREE

FREE

FREE

DAUGHTER OF PURE HYBRID QUEEN that cost us \$50.00 a pair, buy one for \$1.00 and get one FREE.
REGULAR ITALIAN STOCK—Queens 49c; 2-lb. \$2.20; 3-lb. \$3.15

GULF COAST BEE CO.

Schriever, Louisiana

JUNE PRICES on PACKAGE BEES and QUEENS

If you want more pounds per package write us for prices.
HUBER FOREHAND
46 Years Among the Bees.

2-lb. pkg. with queen	\$2.00
3-lb. pkg. with queen	3.00
Queens	.50

Satsuma, Alabama
In the Heart of the Deep South

Italian Bees and Queens

Customers, new or old I take this method of so-liciting your future orders and will greatly appreciate a continuance of your business. There is no deposit required to book an order with me. Full weight, a health certificate and live arrival guaranteed. Queens clipped at no extra cost.

Prices for 1950 package bees with queens also extra queens.

	2-lb.	3-lb.	4-lb.	Extra Queens
1 to 24	\$2.50	\$3.45	\$4.30	\$.75
25 to 99	2.40	3.35	4.15	.70
100 up	2.35	3.15	4.00	.65

FARRIS HOMAN

Shannon, Miss.

PACKAGE BEES — ITALIAN BEES AND QUEENS

On the same old basis—QUALITY, SERVICE, SATISFACTION

Live delivery guaranteed on all shipments. 10% deposit books any order.	2-lb. pkg. with queen	\$2.50
	3-lb. pkg. with queen	3.50
	4-lb. pkg. with queen	4.50

Write for discount on large orders

QUEENS, 50 Cents Each

E. J. BORDELON APIARIES, Box 33 Moreauville, La.

Have You Tried ASHURST "SUREWAY" CAGES?

Read what Mr. Ivan B. See of Bergton, Va.,
has to say:

"In response to the samples of Ashurst
'Sureway' Cages you sent me last season
to try out, I wish to state that I used these
release cages all of them you sent me, and
must say they are far superior to any system
I have used in my thirty-five years in the
honey producing trade, so I am enclosing an
order for more cages."

Signed—Ivan B. See

•
ORDER YOURS NOW
•

SUPERIOR HONEY CO.

OGDEN, UTAH

IDAHO FALLS, IDAHO—DENVER, COLORADO
PHOENIX, ARIZONA—LOS ANGELES, CALIF.

A FAMOUS STRAIN OF LIGHT COLORED ITALIANS

Lot	Queens	2-lbs.	3-lbs.	4-lbs.	5-lbs.
1- 5	\$1.35	\$3.55	\$4.50	\$5.45	\$6.40
5- 15	1.30	3.50	4.45	5.40	6.30
15- 25	1.20	3.40	4.35	5.25	6.20
25-100	1.15	3.30	4.25	5.20	6.10
100 up	1.05	3.20	4.15	5.05	6.00

Select Tested Queens—Before June 1, \$10.00
After June 1, \$5.00.

Above package prices include queens. Queenless packages, subtract \$1.05 from price of package with queen. All queens are airmail, postpaid, but package bees are F. O. B. shipping point and are shipped Express collect. It is preferable to ship package bees by Railway Express, however, they can be mailed and in that event, customers should include postage.

TERMS—Small orders, cash in full. Large orders, 20 per cent deposit, balance to be received two weeks before shipping date. U. S. funds. A 10 per cent discount is allowed on package bees if shipment is made after May 20. A 20 per cent discount is allowed on queens if shipment is to be made after May 20th. And a 25 per cent discount is allowed on queens to be shipped after June 1st.

•
THE DANIELS APIARIES
PICAYUNE, MISSISSIPPI



QUEENS ITALIANS CAUCASIANS

For requeening, making increase and queenless colonies. Whether you want 1 or 1,000, we will give you Prompt Service and Good Quality.

PRICES

Queens		Packages			
Lots of		2-lb.	3-lb.	4-lb.	5-lb.
1- 24	\$.60	\$2.75	\$3.50	\$4.25	\$5.00
25- 99	.55	2.50	3.25	4.00	4.75
100 up	.50	2.25	3.00	3.75	4.50

Add 75c to above prices for Tested Queens
For Queenless Package Deduct Price of Queen
Packages F. O. B. Shipping Point
Queens Postpaid, Air Mailed or Clipped
(No Extra Cost)

•
THE STOVER APIARIES
MAYHEW, MISSISSIPPI



HERE THEY ARE • 1950 PRICES •

	1-lb. Pkg. with queen	3-lb. Pkg. with queen
1-25	\$3.00	\$3.75
26-up	2.85	3.50

10% deposit with order, balance ten days before shipping date. Queen prices on request.

These packages are the same quality as we have shipped in the past, featuring: Gentleness, Good Wintering, Conserving stores.

Order so delivery will be made not later than Friday. Shipping starts March 15th or as soon after as queens are available.

"They Produce"

ROSSMAN & LONG

Box 133

Moultrie, Georgia

YORK'S PACKAGE BEES AND QUEENS FOR 1950

QUALITY BRED ITALIANS

The Strain Preferred by Leading Honey
Producers

Prices with Young Laying Queens

Packages	2-lb.	3-lb.	4-lb.
1 to 24	\$3.25 ea.	\$4.00 ea.	\$4.75 ea.
25 or more	3.00 ea.	3.75 ea.	4.50 ea.

Young laying queens \$1.00 ea.

Tested \$2.00 ea.

Queenless packages, deduct \$1.00 per pkg.

Order direct from this ad and save time. Book
order now and have bees shipped when wanted.

YORK BEE COMPANY

Jesup, Georgia

(THE UNIVERSAL APIARIES)

Puett's

Prices for 1950

	1 to 11	12 up
2-lb. pkg. with queen	\$3.00	\$2.75
3-lb. pkg. with queen	3.65	3.40
4-lb. pkg. with queen	4.30	4.05
Queens	.95	.90

Same Quality, Same Service,
But Lower Prices.



"PUETT'S PACKAGES PRODUCE"

The Puett Company

HAHIRA, GEORGIA

RAISE COMB HONEY

There is always a demand for comb
honey—USE LOTZ SECTIONS

Bright clear basswood

Satin smooth finish

Perfect fitting dovetails

Oval V-grooves

Minimum breakage

We carry a complete line of equipment for
raising comb and extracted honey

also

cartons, glass jars, and tin pails

AUGUST LOTZ COMPANY

Boyd, Wisconsin

Manufacturers and dealers in Bee Supplies

BEEKEEPERS—This is a late spring!

Build up your colonies with

Pollen Substitute

1 part Brewers Yeast, 4 parts Soy Flour

	5-lbs.	10-lbs.	25-lbs.	50-lbs.	100-lbs.
Pollen Substitute	\$1.10	\$2.00	\$4.00	\$6.75	\$11.25
Brewers Yeast	1.50	2.50	5.00	8.00	15.00
Soy Flour	1.50	2.00	3.25	5.50	9.00
Skim Milk	1.50	2.50	5.00	8.00	15.00

All prices F. O. B. Milwaukee. Shipment sent C. O. D.

AMBER LABORATORIES, Inc.

SPECIALTY FEEDS DIVISION

3433 N. BUFFUM ST.

MILWAUKEE 12, WISCONSIN



An Adequate Supply of

DADANT'S

Crimp-Wired

FOUNDATION

will assure you fine combs. You
are protected too when you
know it is made of pure bees-
wax.

DADANT & SONS, Inc.,

Manufacturers

Hamilton, Illinois



LOOK THIS OVER • SOMETHING NEW

We offer untested queen-daughters of Hybrid Breeding Stock developed by The U. S. Dept. of Bee Culture and distributed by The Honey Bee Improvement Coop. Assn. of Ohio. We also have our regular stock of light-colored Italians. Please SPECIFY "Hybrid" or "Regular" on orders. Hybrid or Sunkist Italians: 50c each.

Air Mailed. Clipped.

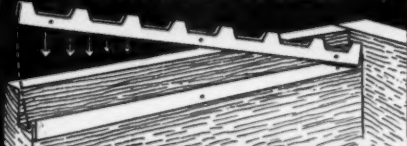
SUNKIST BEE COMPANY

Convent, La.

STOLLER *Slip-on* FRAMESPACER

LESS WORK MORE PROFITS

Now used everywhere as essential equipment. Sixteen styles to fit any standard frame. Write for details, prices.



STOLLER *Honey Farms* LATTY, OHIO

FOR POLLINATION—DISEASE RESISTANT QUEENS AND PACKAGE BEES

Your Choice of Shipping Dates

1950 PRICES

Quantity	Queens	2-lbs.	3-lbs.	4-lbs.	5-lbs.
1 to 9	\$1.30 each	\$4.50 each	\$5.00 each	\$4.00 each	\$7.00 each
10 to 49	1.20 each	3.75 each	4.75 each	3.75 each	6.75 each
50 to 99	1.10 each	3.50 each	4.50 each	3.50 each	6.50 each

IOWA BEEKEEPERS' ASSOCIATION

STATE HOUSE

DES MOINES, IOWA

The most important thing anyone or any business can have is a good will of others. It is as fragile and as beautiful as an orchid; and as valuable as a gold nugget, and as hard to find; as powerful as a turbine and as hard to build; as wonderful as youth and as hard to keep. MUTH CO. since 1858.

WRITE FOR OUR MONEY-SAVING BEE SUPPLY CATALOG.
WE WILL BUY YOUR HONEY AND BEESWAX AT THE
BEST MARKET PRICE.

THE FRED W. MUTH CO.

CLIFFORD F. MUTH, Sr. Pres.

229 WALNUT ST.

CINCINNATI 2, OHIO

BESSONNET'S ITALIAN QUEENS



We compete with QUALITY and not PRICE. You must decide the type of queens you will use in your hives. Our Italians are the result of a lifetime of experience and produced by the best scientific means known.

PRICES—1-24 90c each. 25 up 75c each. Air Mailed

BESSONNET BEE COMPANY, Donaldsonville, Louisiana

THE HEART OF THE COMB HONEY IS FOUNDATION —

The biting quality of the honey, that delicate center taste is foundation. It must become a part of the honey, so tender, a touch of the tongue will crumble it; yet be so strong, that bees work it out quickly and easily.

DADANT & SONS, Inc., Hamilton, Illinois

ITALIAN BEES and QUEENS

Thirty years' shipping experiences. Prompt, efficient, modern.

2-lb. package with queen \$2.75
3-lb. package with queen 3.80
Queens 75 Cents

ALABAMA APIARIES

URIAH, ALABAMA



CAUCASIANS, CARNIOLANS

Hardy, prolific, rapid build-up, best of workers. Caucasians have the longest tongue of any race. Both build beautiful white combs. BOTH ARE THE GENTLEST OF ALL RACES OF BEES. Gentleness is safest in towns, near neighbors or near streets or highways. Gentleness saves time, sweat, patience and work. Prices, both races: Untested queens \$1.00 each. Tested queens \$1.75 each. By Air Mail.

ALBERT G. HANN

Glen Gardner, New Jersey

ITALIAN BEES and QUEENS

2-lb. pkg. with queen \$2.00; 3-lb. pkg. with Queen \$3.00; Queens, each 45c.

10% will book orders, balance 10 days before shipping date. Health certificate with each order, live delivery guaranteed.

BAYOU BEE CO.

RT. 1, BOX 48, MONTEGUT, LA.

CALIFORNIA STATE DISTRIBUTOR FOR

Lewis-Dadant Beeware and Crimp-Wired Foundation

Business located 3/4 mile south of Tulare on Highway 99. Mailing address

F. O. IRICK

809 S. H ST.
TULARE, CALIF.

YELLOW

Italian Bees and Queens

PRICES AFTER MAY 10TH

PACKAGE BEES WITH QUEEN

2-lb. 5-lb. 2-lb. 5-lb.

\$2.50 \$3.00 \$3.75 \$4.50

Queens 50 ea. plus 5c ea. for Air Mail.

We guarantee live delivery, prompt service, and health certificate, 10% down to book your order, balance 10 days prior to shipping date.

Oscar Arnouville

BOX 35 HAMBURG, LOUISIANA

Palmetto Quality Queens

We are prepared to furnish you with QUALITY QUEENS from our Mott's strain of Three-Banded Italians. Summer prices as follows: 1 to 5, 50c each; 5 to 10, 55c each; 10 to 50, 55c each.

Our guarantee—good queens and no disease

C. G. Ellison & Sons BELTON, S. C.

Northern Bred Leathered

Italian Queens

50 CENTS EACH

Air mail if distance justifies. Better equipped to give good service.

DIEMER BEE CO.

RT. 2, BOX 7 LIBERTY, MO.

FOR BETTER BEEKEEPING USE
DADANT'S FOUNDATION

YOUR CUSTOMER IS *Always Right!*

HE WANTS MORE
COMB HONEY!



GIVE HIM WHAT
HE WANTS!

Plan right now to add an extra super for comb honey production.

Your Beeware* dealer can supply everything you need

— Supers, Sections, Foundation, Cartons, Wrappers —

G. B. LEWIS COMPANY

Watertown, Wis.

* BRANCH WAREHOUSES—COLONIE AND MONTGOMERY STREETS, ALBANY 1, N. Y.
1117 JEFFERSON STREET, LYNCHBURG, VIRGINIA—92 RIVERSIDE STREET, CHILLICOTHE, O.

Honey Bees

EUGENE WALKER
LIVE OAK, CALIFORNIA

G. B. Lewis Wooden Goods!

DADANT'S WORLD FAMOUS CRIMP-
WIRED FOUNDATION—Their 85 years'
experience is your safeguard.
Catalogue on request.

DOTSON'S APIARIES

3059 W. Roxboro Rd. N. E., Atlanta, Georgia

WESTERN CANADA BEEKEEPER

Subscription \$1.50 per year, \$2.25 two years,
\$3.00 three years. In combination with
American Bee Journal \$2.50 per year.
Timely topics on western Canadian bee-
keeping and all the news about Canada and
Canadian markets. You cannot afford to be
without the most up-to-date information
in these days of great changes. Sample copy
free. Address **WESTERN CANADA BEE-
KEEPER**, 311 Aitken Building, Winnipeg,
Manitoba, Canada.

Hollopeter's Hardy Italians

Our 50th year with the bees, 40th as
commercial queen breeders, in Northern
mountain location suited to producing
hardy, prolific queens, with excellent mail
service. We give prompt service and full
value in each queen. **QUEENS**, \$1.00 each.
Delivery begins May 15th.

White Pine Bee Farms
ROCKTON, PENNSYLVANIA

Renew Your Subscription

DADANT'S STARLINE HYBRID QUEENS



3-Way Italian Hybrid Combination
High Production
Resistance to the Foulbroods
Uniform Colony Performance

For our own reliable 3-Banded Italian queens reduce each item 25 cents.
Package bees still available.

SERVICE

WICHT APIARIES

QUALITY
408 MILLER
STREET

Stock of DADANT & SONS
reared under ideal conditions
by **WICHT APIARIES**

Quantity	Queens
1-24	\$1.25
25-30	1.15
100-250	1.05
1000 up	1.00

DEPENDABILITY

Hattiesburg, Miss.

—HONEY WANTED—

CARLOADS AND LESS THAN CARLOADS
Send samples and quote best cash price de-
livered to us. All grades.

HONEY SALES COMPANY

1806-08 No. Washington Ave.
Minneapolis 11, Minnesota

BEE SUPPLIES

Write for our new catalog and
price list.

A. H. RUSCH & SON CO.

Manufacturers — Jobbers
KEEDSVILLE, WISCONSIN

Caucasians — Italians

TROY H. NANCE

3764 Jeffrey Avenue
SACRAMENTO, CALIFORNIA

AUSTRALIAN BEEKEEPING NEWS

The Leading Bee Journal of
Southern Hemisphere is the

AUSTRALASIAN BEEKEEPER

Subscription 8 shillings per year,
start any time. Acquire for inter-
national money order for 8 shillings
(Australian) at your Post Office. Write
now to The Editor P. O. Box 28, West
Maitland, New South Wales, Australia

DISTINCTIVE HONEY LABELS

JUST OUT — A new series
of five-color lithographed Honey
Labels, with a variety of flowers in color. Made to fit all size containers. Sold in
quantities to suit all customers. In lots of 250, 500, 1,000 or more. Imprinted ac-
cording to your instructions, and sent postpaid anywhere in U. S. A.

SEND FOR SAMPLES AND PRICES—OVER 70 LABELS TO CHOOSE FROM

AMERICAN BEE JOURNAL, Hamilton, Illinois

Classified Advertisements

BEES AND QUEENS

ITALIAN QUEENS—Hardy northern stock. Ready June 25th. \$1.00 each; 10 up, 90c. Shirl Baker, Rodney, Michigan.

GOLDEN ITALIAN BEES AND QUEENS, real beauties. 2-lb. with queen, \$3.00 each; 3-lb. with queen, \$4.00. Select untested queens, 1 to 25, 90c each; 25 up, 75c. Carolina Bee Farm, Graham, N. C.

CAUCASIAN CARNIOLAN BEES—2-lb. pkg. \$2.50; 3-lb. pkg., \$3.00. Queens 75c. Tillery Brothers, Greenville, Alabama.

PACKAGE BEES headed by Mountain Gray Caucasians or leather colored Italian queens. Write for prices. Twin Bee Co.-op., 3616 Caucasian Circle, Tampa, Florida.

GOLDEN ITALIAN QUEENS marked with bright lacquer, 75c ea., postpaid. We guarantee you to be satisfied with them in every respect or your money will be refunded. Brose Apiaries, Felton, California.

BREWER'S LINE BRED CAUCASIAN QUEENS, 1-99, \$1.00; 100 and up, 75c. Member ABBA, Brewer Brothers Apiaries, 3816 Caucasian Circle, Tampa 9, Florida.

THREE BANDED ITALIAN QUEENS—75c each. Satisfactory service from queen or replacement free. Luther Pickett, Eiland, North Carolina.

GREEN'S profit producing queens are the best. Backed by 22 years of breeding better queens. 75c each. D. P. Green, Rt. 2, Deland, Florida, Phone 512XMX.

CAUCASIAN BEES AND QUEENS—Finest quality, extra good workers and very gentle. Package bees—1 to 25, 2-lb. with queen, \$3.00; 3-lb. with queen, \$4.00. Select untested queens, 1 to 25, 90c; 25 up, 75c each. Prompt service. Black River Apiaries, Rt. 1, Currie, N. C.

THREE BANDED ITALIAN BEES AND QUEENS—2-lb. with queen, \$3.00 each; 3-lb. with queen, \$4.00. Select untested queens, 1 to 25, 90c each; 25 up, 75c each. Alamance Bee Co., Graham, N. C.

CAUCASIAN QUEENS \$1.00 each, postpaid. Eppling's Apiaries, "Idelwilde," Covington, Virginia.

I HAVE A LARGE STOCK of nuclei and colonies for April, May and June delivery. Carniolans and Italians. Queens ready to mail now, \$1.25 each. Wm. Atchley, 500 East 9th Street, Upland, California.

ITALIAN PACKAGE BEES AND QUEENS—Dependable quality, honest service, reasonably priced. Inquiries solicited. Crenshaw County Apiaries, Rutledge, Ala.

QUEENS OUR SPECIALTY—Carniolans, \$1.20; Caucasians, 90c. Isolated mating yards. Italians, 90c each; Italians after May 15th, 50c. Walter D. Leverette, Fort Pierce, Florida.

THREE BANDED ITALIAN BEES AND QUEENS, 2-lb. with queen, \$3.50; 3-lb. with queen, \$4.50. Queens \$1.10 each. Bessemer Apiaries, 4300-A Raleigh Road, Greensboro, N. C.

CAUCASIAN QUEENS—1 to 9, \$1.25 each; 10 to 49, \$1.00 each; 50 and over, 90c each. Howard E. Cron, Rt. 1, Box 73, Ripon, California.

THE SAME PRICE to everybody. 75c for Italian queens. 2-lb. package with young laying queens \$3.00 and 3-lb. package with young laying queen \$3.75. Southern Apiaries & Supplies Company, Chatom, Alabama.

GOLDEN QUEENS—90c air mail. Write for quantity price. O. E. Brown, Rt. 1, Asheboro, N. C.

LANGE'S QUALITY QUEENS for 1950—Leather colored Italians, 1-50, \$1.10; 50 and up, \$1.00. Lange Apiaries, Rt. 2, Box 23-W, Mission, Texas.

Copy for this department must reach us not later than the tenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rate of Classified advertising—13 cents for each word, letter, figure or initial, including the name and address. Minimum ad, ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other references with your copy. Advertisers offering used equipment or bees on comb must guarantee them free from disease or certificate of inspection from authorized inspector. The conditions should be stated to insure that buyer is fully informed.

BRIGHT GOLDEN ITALIAN bees and queens, 2 lbs. with queen, \$3.50; 3 lbs. with queen, \$4.50. Queens, \$1.10 each. Guilford Apiaries, 4300-A Burlington Rd., Greensboro, N. C.

YANCEY HUSTLERS—Reliable package bees and queens. Priced right. Yancey Valley Apiaries, Bay City, Texas.

FOR SALE

WINDOW CARTONS—Attractive, two colored, selling out at a sacrifice, 4 1/2 x 6 1/2 inches, \$9.00 per 1,000 f.o.b. Lose Brothers, 206 East Jefferson St., Louisville, Ky.

FOR SALE—1200 10-frame painted supers with frames wired and foundation at \$1.50 each; eight hundred without foundation \$1.25 each. Hanna Bailey, Box 328, Gooding, Idaho.

FOR SALE—Lifetime 8-frame extractor \$95.00. Howard Richards, Lexington, Nebraska.

FOR SALE—100 to 1000 hives bees located North Florida and South Alabama. Price right. Write Box 30, care American Bee Journal.

FOR SALE—1200 two-story 10-frame colonies Italian bees located in famous Flat-head Valley. Thirty registered locations. Seventeen year average production, 140 pounds. Good wholesale market. 4000 full depth lock-cornered supers with good combs. Queen excluders. Good modern extracting plant and wood working shop in good town. Machinery ready to go. W. R. Hettrick, Ronan, Montana.

ONE HONEY EXTRACTOR, 2-frame reversible, 2 tanks, 500 lb. capacity. Hershaier wax press. Geo. Burke, Fultonville, N. Y.

GOOD USED Modified equipment—5 I-V covers, \$1.50 each. 3 metal covers, 6 bottom boards, \$1.00 each. Rosedale plane \$4.50; steam knife \$3.50, good but no tubing. Stanton Smith, Lebanon, Ohio.

FOR SALE—Filter presses, filter paper of various types for filtering honey. The Cellulose Co., Sandusky, Ohio.

FOR SALE—Twenty-frame Root honey extractor complete with motor and power drive. A-1 condition, ready to operate. F.O.B. Omaha, Nebraska, \$110.00. J. J. Guenther, 7715 N. 39th St.

BEES FOR SALE AND LEASE—I. will sell part or complete units to fit your requirements. 2. You can purchase part of unit and lease additional quantities to round out your needs with option to buy later. 3. Proven territory. Idaho, Wyoming, Montana, Nebraska—sweet clover, alfalfa areas. 4. Our processing plant and marketing program assures outlet all honey produced from bees purchased or leased. Bright future—low cost operations. Our 45 years' practical production experience ready to assist you getting started. Right

prices, reasonable terms available. R. D. Bradshaw & Sons, Wendell, Idaho. Largest individual producer-packer in U. S.

HONEY and BEESWAX WANTED

WANTED—Bulk quantities of amber and white extracted honey. Submit sample. Schultz Honey Farms, Ripon, Wisconsin.

WANTED—Honey in any quantity. Please send samples, quote price. Cole's Honey Co., 231 Pacific Ave., Piedmont, California.

WANTED—Comb honey and extracted honey, large or small amounts. Send price list and samples. R. A. Riley, Box 265, Daytona Beach, Florida.

WANTED—Extracted honey, white or light amber, in 80's. State price in first letter. E. J. Heidt, 1004 W. Washington St., Bloomington, Illinois.

WANTED—All grades comb and extracted honey, large or small amounts. Quote price in first letter. Mail sample. King Honey Co., 336 Bates St., Kansas City, Mo.

HONEY AND WAX WANTED. Mail sample. Advise quantity. Bryant & Sawyer, 2425 Hunter St., Los Angeles, Calif.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1380 Produce Street, Los Angeles, California.

HONEY FOR SALE

ORANGE BLOSSOM, Florida tupelo, white clover, buckwheat honey and pure maple syrup in one or five gallon cans. Alexander Co., 819 Reynolds Rd., Toledo, Ohio.

HONEY—Choice light amber mixed with citrus in 40, 80 and 12 cent a pound. N. J. Barnett, Box 695, Pharr, Texas.

CLOVER, extracted, in 60-lb. cans. Liquid, \$8.40 per can; crystallized, \$8.00 per can. Lose Brothers, 206 E. Jefferson St., Louisville, Ky.

NEW CROP OF HONEY shipped daily from producer in Florida. Pure orange blossom, 5-lb. pail \$2.25. Pure Florida cut comb honey, 5-lb. pail \$2.75. No. C.O.D. orders; all shipments prepaid. E. R. Riley, Box 1610, Daytona Beach, Florida.

POSITIONS AND HELP WANTED

SITUATION WANTED—Single man, good health, 15 years apary experience, references. Doesn't drink. Write G. W. Anderson, Webb City, Missouri.

HONEY SALESMAN WANTED—Good income possible. Proven territories. Write Box T. O., care American Bee Journal.

SUPPLIES

YOUR WAX WORKED into quality medium brood foundation 23c pound; 100 lb., \$19.00. Medium brood foundation for sale at 65c lb. Fred Peterson, Alden, Iowa.

OUR FREE BEE SUPPLY CATALOGUE. Lists double boilers, special motors, blowers, etc., not listed by others. We manufacture bee hives, wired and plain foundation, tanks and extractors, etc. Quick delivery from stock. Walter Kelley Co., Paducah, Kentucky.

CLEAN UP AFB with sulfa. 25 tablets 50c; 50, \$1.00; 100, \$1.50; 1,000, \$7.00. Free Circular, quick shipment. WALTER T. KELLEY CO., PADUCAH, KENTUCKY.

SOUTHERN CALIFORNIA HEADQUARTERS for Bee Supplies. Make our facilities your "Trading Post." Complete stocks. See our Bulletin Board for Budget Bargains. The Diamond Match Company, 1300 Produce Street, Los Angeles 21, Calif.

FOR SALE—25,000 mill run Lewis sections 3 1/2 x 1 1/4 scalloped 4 sides 1/2 inch at \$14.00 per thousand, f.o.b. Hamilton, Ill. Dadant & Sons, Hamilton, Illinois.

BEE SUPPLIES—Lewis Woodware — Dadant's Foundation. Send for catalog. Simeon Beller, Intercourse, Pennsylvania.

HONEY LABELS

Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

SUPPLIES

(Continued)

THE ONLY COMB FOUNDATION PLANT in the East. We sell foundation, work your wax, render combs and cappings. Robinson's Wax Works, Rt. No. 3, Auburn, New York.

WRITE FOR CATALOGUE. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

SEEDS AND TREES

SEEDS OF HONEY PLANTS. Ask for free catalogue. Melvin Pellett, Atlantic, Iowa.

DAIRY GOATS

CASH FROM SPARE TIME—Operate goat dairy. Magazine tells how, trial 6-mos. 25c. Dairy Goat Journal, Columbia, E2, Mo.

MISCELLANEOUS

RANCH MAGAZINE—Do you find it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information of range sheep than any magazine published. Subscription \$1.00. Hotel Cactus, San Angelo, Texas.

KNOW interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English, by the Phupen Apiaries (Himalayas), Ramgarh, Dist. Nainital, U. P., India and obtainable from them. Subs. Rs 7/- or 10 Shillings or 25c Dollars per annum. Single copy Rs 1/4/-s. 1/9 or 40 cents (international money order). Payment in mint postage stamps of your country accepted.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents, stamps. Membership of the Club including subscription to the paper 10/6. The Apis Club, The Way's End, Foxton, England.

CANADIAN BEE JOURNAL

Canadian beekeepers have much in common with their neighbors in the U. S. If you are interested in bee activities "World of the Border," send us your subscription NOW. Subscription price, \$1.75 per year in U. S. A.

CANADIAN BEE JOURNAL

54 Bloor St. West, Toronto 5, Ontario

Dadant's Honi-Sweet Candies

Made with milk chocolate, honey and pecan meats. Something different. Pound box, \$1.50 Postpaid.

Dadant & Sons, Inc.

HAMILTON, ILLINOIS

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

QUEENS Garon's High Producing Stock QUEENS To Overcome Low Honey Prices

PRICES ON OUR 3-BANDED ITALIAN QUALITY QUEENS

1-24	78c
25-99	85c
100-499	90c

Queens Mailed Prepaid. Regular or Air Mail, Painted and (or) Clipped at No Extra Charges.

PRICES On Garon Reared Dadant Sterilized Hybrid Disease Resistant Queens

1-24	\$1.10
25-99	1.00
100-499	.95



GARON BEE COMPANY, Donaldsonville, Louisiana



Discussion

(Continued from page 272)

is limited to one excluder to the hive, and a piece of window screen. While five stories for two queens is more congesting than four stories for one, there is so much better work that swarming is not a danger. Of course one has to be on his toes to keep the honey extracted every few days. Incidentally, the lower queen is given but one story, the excluder being at that point because the area near the entrance is more free of honey and available to the queen. Although I have lost very few queens, I leave the best one in the upper chambers.

• • • •

Harry T. Starnes,
Indiana

In the home yard, the two-queen system can be used profitably, but requires expert manipulation. It is doubtful that the beginner will have the skill to realize a profit from the system. Commercially, I doubt that two-queening can produce honey cheaper on a pound basis due to the extra work necessary for division of the brood, introducing the young

queens, and checking the queen later. Experimentally, the system looks good, there is less chance for poor queens to knock a colony out of production, since two poor queens are not apt to be in the double unit. The hives will lack weight early in the season, and due to increased height of the hives, are more liable to damage in high winds. Few beekeepers possess the required skill at first to use this system and few will use the scheme on a large scale after a little experience with it. But as this question is worded, I would say that the two-queen system does increase production profitably on a few colonies, with good, skillful operation.

DISCUSSIONS TO COME—

July—What have you found to be your most time-saving short cuts and devices for managing bees?—Steve Taber, Wis., Lloyd Klopfenstein, N. Dakota. Every beekeeper has his own tricks of the trade so let us hear yours at this time.

Origin and Evolution of Honey Bee

(Continued from page 279)

The highest development reported in *Allodape* is represented by *Allodape ceratinoides* Grib. In this type the developing larvae are kept supplied individually with pollen by the mother, and the nest in the course of time comes to be occupied by larvae and pupae in various stages of development. Eventually the pupae transform to adults who return to the parent nest for shelter, at least for a time. The young adult virgin females aid in collecting pollen and feeding their brother- and sister-larvae, thus establishing a genuine if somewhat transitory insect society. None of these females are sterile, however, and, in all probability, after mating, fly off and found new nests. But unexpected surprises may well await further investigations of these interesting African bees.

(To be concluded in July)



The Rich Honey Farms

Jeanerette, Louisiana

A Choice of Three Fine Strains of Queens

	1-24	24 up
DADANT'S STARLINE HYBRIDS	\$1.10	\$1.00
Rich's Leather Italians	.85	.75
Caucasians	.85	.75

THESE PRICES ARE EFFECTIVE TO SEPTEMBER 16TH

Bees and Queens

Italian, Caucasian and Resistant

Over 30 years a shipper.
Send for FREE CIRCULARS.

Blue Bonnet Apiaries

Rt. 1, Box 23
WESLACO, TEXAS



MACY'S ELECTRIC UNCAPPING KNIFE

Operates from 110-115 AC current. Steady heat. Adjustable thermostat. 6 foot rubber covered cord.

\$15.00

HUTCHISON MFG. CO., Licensed Mfr.

1239 S. LORENA ST.

LOS ANGELES 23, CALIFORNIA



FOR BETTER BEEKEEPING

DADANT'S FOUNDATION

FIRST CHOICE OF EXPERT BEEKEEPERS

BY AIR MAIL

NOW By ordering a few days in advance you too can get OK queens. 75c each.
A strain derived from half dozen of the World's Best.
Disease and winter losses eliminated greatly.

Smoker fuel of the best known. \$2.00 F. O. B.
O. K. ANDERSON & SON
BOX 193
COFFEE SPRINGS, ALABAMA

ARE YOU LOSING BEESWAX?

We render old combs, cappings, and slumgum for beekeepers. Our steam wax presses get every available ounce of wax out of this material. Send for terms.

DADANT & SONS, Inc.

Hamilton, Illinois

Flowers' Quality Italians

That will stand test for honey gatherers, gentle and prolific. Our motto is to serve you with best young bees and queens money can buy. Ask our customers. State health certificate with each shipment, prompt live delivery guaranteed. Replacement or refund made promptly upon receipt of bad order from your express agent. No orders too large or too small, shipped when wanted, place orders early.

Packages with Young Queens F. O. B.

2-lb. package	\$2.50
3-lb. package	3.15
4-lb. package	4.00
Extra queens \$1.00 delivered	

Flowers Bee Company

JESUP, GEORGIA

QUEENS

50c each

W. E. PLANT

HATTIESBURG, MISSISSIPPI



FRAME-GRIP—SEND NOW!

This light modern tool is for easy handling and removal of frames from the bee hive. Thousands of satisfied customers have proven its worth. \$3.00 plus 15c postage fee.

MCCORD MFG. CO.

Rt. 2, Box 466, San Jose, California

NAISAVONAV

QUEENS, rest of season \$65.00 per hundred

D. T. WINSLETT

1015 Sonoma Avenue
NO. SACRAMENTO, CALIF.

SURE—YOU'LL LIKE IT

SEND FOR FREE SAMPLE COPY

The Beekeepers Magazine

LANSING 15-B, MICHIGAN—ESTAB. 1939

"Just a Little Independent"

Spears' Quality Bred Italians

When you buy queens you must buy for quality since quantity doesn't enter the picture—and that's exactly what we have—QUALITY—in any quantity. Now is the time to requeen during the honeyflow and be sure that your bees have the best queens before winter comes on—so order today. 50c ea. any quantity—Quality Bred Italians

SPEAR'S APIARIES
Hamburg, Louisiana

MICHIGAN DISTRIBUTOR OF

ROOT BEE SUPPLIES

HONEY PRODUCER AND
PACKER'S SUPPLIES

Michigan Bee & Farm Supply

Box 7, 510 N. Cedar, Lansing, Michigan

Renew Your Subscription

HIGH QUALITY QUEENS

75c each by Air Mail

CARLUS T. HARPER
NEW BROCKTON, ALA.

Limited Number Select Italians

QUEENS

Personally reared and selected by

M. C. WEST
DAVIS, CALIFORNIA**ITALIAN QUEENS**

85c EACH

Girardeau Apiaries
TIFTON, GEORGIA**PRITCHARD'S QUEENS**

I am using James W. Bains breeding stock and system of queen rearing. 22 years queen rearing experience. 10 years with my grandfather Mel Pritchard.

QUEENS \$1.00 Each Satisfaction Guaranteed
LAWRENCE PRITCHARD, Ledlow Falls, O.**Modern Beekeeping**

The picture magazine of beekeeping. We show you with pictures how to do the job easier, quicker, and better. Special inventor's page. 1 yr. \$1.50; 2 yrs. \$2.50; 3 yrs. \$3.25

MODERN BEEKEEPING
PADUCAH, KENTUCKY

THREE-BANDED & THREE-WAY

DR ITALIAN PACKAGE
BEE QUEENS**JACKSON APIARIES**
FUNSTON, GEORGIA**QUEENS 75c EACH**
BALANCE OF SEASON**J. F. McVAY**
JACKSON, ALABAMA**CAUCASIAN QUEENS**50 CENTS EACH
75 CENTS IN LOTS OF 50
OR MORE**Lohman Bee Co.**
Rt. No. 2, Box 844, Loomis, Calif.**Mountain Gray Queens**
FOR JUNETry some of our queens for gentleness, easy handling, and good honey getters. **PRICES**—1 to 24, \$1.10 each; 25 to 99, \$1.95 each; 100 up, \$1.80 each. Tested \$2.50 each.**BOLLING BEE CO.**
BOLLING, ALABAMA**MILLER REARED-DADANT****DR QUEENS**The Very Latest In Resistant Bees
BRED IN ISOLATED YARDS

DR queens	1-24	25-up
Italian	\$1.10	\$1.00
	.75	.75

JOHN G. MILLER, 723 6th, Corpus Christi, Texas● **QUEENS—PACKAGE BEES FOR 1950** ●

ESTABLISHED 1881

Maximum production is most easily assured with superior bees and queens. That's one way we try to help you make money. Superior bees and queens is our motto at all times. We like to have 50 per cent deposit and balance before shipping date. We believe this is fair to all—as we like to plan and ship the day you want shipment. Price scale:

Queens, any number	\$1.00—Tested Queens \$2.00
2-lb. package and queen	\$3.00 any number
3-lb. package and queen	4.00 any number

THE VICTOR APIARIES**Uvalde, Texas**

Patent No. 2111748

Don Barrett, Michigan's Chief Bee Inspector, and Son have operated several hundred colonies for many years. Don often remarks, "The Brand Capping Melter system has given us more satisfaction than any extracting equipment ever bought."

Manufactured by

A. G. WOODMAN CO. GRAND RAPIDS, MICHIGAN**Do you know**with the **BRAND CAPPING MELTER**. Mike Hrushka, one of Michigan's best beekeepers says "The Melter saves us about one day's labor in four in caring for the cappings. We clean up each day honey in tanks, beeswax in cakes."**BETTER BRED QUEENS THREE BANDED ITALIANS**

Watch those falling queens and poor colonies. Be sure and replace them with our Better Bred Stock and watch them pay off.

2-lb. package bees and queen	\$2.25
3-lb. package bees and queen	3.00
Queens	.50 each

CALVERT APIARIES**Calvert, Alabama**● **QUEENS—BRIGHT THREE-BANDED ITALIANS** ●

If you need queens you need the very best, and that is just what we have.

1-75 cents	50-75 cents	100-25 cents each
Tested queens—\$1.50	Breeders—\$3.00	No cost for clipping

TAYLOR APIARIES, Box 249, Luverne, Alabama



Oklahoma State Beekeepers Ass'n. Pollination Meeting May 5

Oklahoma beekeepers and seed producers at a meeting at Duncan, Oklahoma, devoted most of their time to the subject of the importance of bees in the pollination of legumes. Stephen County Association took care of local arrangements which contributed much to the success of the meeting.

The speakers strongly emphasized the need for bees in seed production. Mr. Russell Pierson, Oklahoma Crop Improvement Association, stressed the need for cross pollination by bees to produce better quality seed. Dr. F. A. Fenton, head of the Entomology Department, Oklahoma A & M College, reported on the importance of bees in tripping alfalfa and plans for expanding their research in the pollination field. Lyman Coe, Samuel Roberts Noble Foundation, Ardmore, Oklahoma, spoke of the success of that organization in experiments to increase seed production of vetch with bees for pollination and their plans to continue this work this summer, along with experiments on the relationship of soil fertility and moisture to nectar flows and seed production. A representative of the District Soil Conservation office, U. S. D. A., Fort Worth, Texas, Mr. Phillip Allen, pointed out why their department now recommends the use of bees for pollination. Other speakers included Clyde A. Bower, State Bee Inspector; Fain G. Cesar, Oklahoma State Department of Agriculture; E. A. Kissick, Research and Marketing Section, O. S. D. A.

New officers of the association are: Glen Gibson, president; Carl Blackwell, vice-president; and C. F. Stiles, secretary-treasurer.

Diversion and Export Programs

On May 9, 1950, Mr. E. M. Graham, Chief of the Specialty Crops Division, Fruit and Vegetable Branch, Production and Marketing Administration, U. S. Department of Agriculture, issued regulations and application forms for the programs to divert honey into new uses in

industry and for export. The diversion program is designed to encourage the use of honey in new outlets and to thus expand the domestic consumption of honey, while the export program is for the purpose of assisting private traders in selling honey to eligible export destinations.

Diversion is defined in the regulation as "the utilization of domestically produced honey in the manufacture of an approved product, by blending with one or more other commodities, by coating of a food, feed, or tobacco product, or by any other method approved by the Director, so as to preclude re-use of the honey as honey. Approval of diversion products shall be restricted to those in which (a) no honey has been utilized by any manufacturer since January 1, 1948, or (b) the use of honey has been negligible as to either the number of manufacturers or the percentage of the total sweetening agents employed in the product, or both." The rate of payment applicable to the diversion program is 3.75 cents per pound.

The export program permits exports to the so-called E. C. A. countries which include practically all countries of Europe and Asia with the exception of those behind the iron curtain. The rate of payment applicable to honey exported under the terms of the regulation is 4.5 cents per pound.

Much interest has been shown on the part of industries in the diversion program and dealers are hard at work attempting to move honey under the export program. Although it is still too early to predict what beneficial results will come to the industry from the operation of these programs, it is believed that the probable outcome will be to create new permanent uses for honey in industry and restore some of our export markets. All interested parties should obtain copies of the regulations from Washington, D. C., and study them carefully.

Iowa Beekeepers Meet

The Annual Short Course for beekeepers was held at Iowa State

Previews and Events

College, May 9 and 10. A most worthwhile program was presented with Dr. E. J. Dyce of Cornell University as the guest speaker. In a series of lectures illustrated by slides and movies, Dr. Dyce discussed the processes and equipment involved in the preparation of liquid honey for the retail market, ways to reduce apary management costs, and new trends in honey houses and extracting equipment.

Pollination and its many problems was a major theme of the program with R. J. Walstrom telling about the Nebraska program for alfalfa pollination, B. A. Haws stressing the necessity of controlling harmful insects while providing adequate pollination with honey bees, R. A. Grout reporting on the national problem and outlook for pollination, and Glenn O. Jones approaching the problem from the beekeepers' standpoint. It was generally brought out that beekeepers should have written agreements with growers, that it is just as essential to control the harmful insects as it is to provide honey bees for pollination to obtain legume seed, that there is a serious legume seed shortage in view of programs of soil conservation and the retiring of cash-crop lands to grasses and legumes, and that beekeepers will have to solve their own problems with respect to payment for pollination services with emphasis on a share basis of some kind.

A highlight of the program was Henry Hansen's movies and story of his recent trip to Denmark and other European countries during the past summer. Following each daily session, Dr. O. W. Park and his assistants demonstrated in the college apiary the experimental work they are undertaking, with those attending donning bee veils and learning first-hand from watching the colonies manipulated.

Forage Seed Conference in Iowa June 2-3

Farmers, farm leaders, officials, seedsmen, beekeepers, equipment dealers, and others will attend two forage seed conferences in Iowa. The first all-day meeting will be held at Hawkeye Downs, near Cedar

Rapids, June 2, and the second will be held at Atlantic, Iowa, June 3. The meetings are being sponsored jointly by the Chamber of Commerce of the two towns, Iowa State College, Iowa Soil Conservation Service, Iowa production and Marketing Administration, Iowa Department of Agriculture, and the Iowa Beekeepers' Association.

The purpose of the meetings is to stimulate interest in the production of forage crop seeds. The program will include a review of the need for increased forage seed production and detailed discussions on the best way to raise, harvest, and market the different legume and grass seed crops. Some of the best authorities in the country will discuss these subjects. They include Dr. W. M. Myers, Chief of the Forage Crops and Plant Diseases Division, U. S. D. A., Hervey Hazen, State P. M. A. Chairman, Dr. Iver J. Johnson of Iowa State College, Dr. J. H. Lilly of Iowa State College, Dr. W. E. Dunham of Ohio State University, and others.

The increasing prominence of forages in cornbelt farming operations has built up a demand that exceeds the supply of a number of grasses and legumes. Corn acreage allotments will tend to increase the demand still further. With the prospects of high prices for forage seeds, there is an excellent opportunity for farmers to turn a hay crop into a valuable cash seed crop, if it is handled properly. Officials in other states are being urged to sponsor similar meetings of this kind.

Westchester County, N. Y. Tarrytown, June 18

The Westchester County Beekeepers' Association will hold its first outdoor meeting of the year on Sunday, June 18, 1950, at 2:30 P. M. at the home of Mrs. Julia L. R. Chase, 12 Windle Park, Tarrytown, N. Y.

Following a short business meeting, there will be a practical demonstration of hive inspection given by the Mutual Assistance Committee. Visitors are always welcome. Refreshments will be served.

B. F. Miller, Publicity.

Michiana Beekeepers Ass'n. Edwardsburg, Michigan, June 25

The next field demonstration meeting of the Michiana Association will be held June 25, at 1:30 P. M. at the bee yard of Dale Clare and I. G. Brady near Edwardsburg, Michigan. To find apiary, drive northeast out of Edwardsburg on route M62, turn right at first corner and go straight east to location on Painter Lake.

Otto Bon Durant.

New Jersey Joint Meetings May 20-June 17

The first bee meeting of the season was held May 20, 1950, at the apiary of Joseph Fekel, Vineland, New Jersey. It was the first field meeting of the New Jersey Beekeepers' Association to be held in conjunction with the newly formed South Jersey



Walter Severson Retires

Walter Severson, manager of the Albany branch of the G. B. Lewis Company for over a quarter of a century, has retired from active business. He entered the business world as an employee of the General Electric Company at Schenectady, N. Y., and was later connected with the Municipal Gas Company of that city. He also worked for three years in the Department of Agriculture at Albany.

In 1924, Mr. Severson became branch manager for the Lewis Company, and held that position for twenty-six years. He may well feel a justifiable pride in holding this important position with a company of a worldwide reputation.

Mr. Severson devoted much time and effort to civic work. He served on the Board of Education and served the Altamont Reformed church as a member of the consistory and as church school superintendent.

Now that he has retired, he plans to continue his interests in beekeeping as a side line and cultivate other hobbies as well. In the picture he is shown (at right) with M. G. Dadant and another beekeeper "talking bees" in a New York apiary.

Beekeepers' Association, a branch of the N. J. B. A. An interesting program, which included frame wiring, foundation embedding, and bee yard demonstrations, was conducted at Mr. Fekel's well-equipped apiary.

The second field meeting of the year will be held in conjunction with the Morris County Branch of the New Jersey Beekeepers' Association on June 17, 1950, at the farm and apiary of Fred Coddington, in Millington, New Jersey. The meeting will get under way at 10:30 A. M. There will be talks on pollination, seasonal operations and a bee yard demonstration. All persons interested in beekeeping are cordially invited to attend.

Milfon H. Stricker, Sec'y-Treas.

A Half Century Review

(Continued from page 266)

We have come to that day when the skillful, careful man will win and others will fail. We have come to that day when small, well-cared for yards in selected spots will be the rule of success. We have come to that day when production must not be blind but

geared to demand; perhaps some comb honey, some extracted. We have come to the time of larger and larger colonies of bees—good combs, better queens, two or more hive bodies for brood, abundant pollen reserves, abundant honey stores—to get more honey from a given area of bloom.

More than that, we have come to that crisis in our agriculture when our bees mean more to the farmer than ever before. We must help with the farmer's fruit, seed, and vegetables. As we become tuned to the new problems this brings, we will again face a new way of beekeeping.

I can see many a beekeeper in the years ahead, using his bees to set fruit in spring, moving to clover in early summer, while producing legume seed setting colonies for mid and late summer, winding up in fall locations to rehabilitate his outfit for another year. Such a skilled man may not need thousands of colonies. He may do as well with hundreds. And likely he will do better.



All Around the Bee Yard

G. H. Cale

Our apiary manager, Elva Kirlin, has just come back from the branch house in Paris, Texas, with a big story of how beekeepers from here, there, and everywhere are flocking in with thousands of colonies where the past few years have brought a big upswing in Hubam and vetch for seed. Now the vetch flow is on. Spring is past and summer is on the land.

He comes back here to find spring still waiting on the edge of summer and little for the bees to do and still less chance as days pass that they will show flow signs until mid-June. Then he goes into Wisconsin where spring is still in force and maybe some frost in the ground under the leaves. It gets confusing, this passage of seasons and seldom does one person get the feel of the advent of spring in three different places. Truly the bees are inseparable from the passing of time and the changes of weather.

The steady turn to the production of bulk comb honey and section comb honey is a good example of supply and demand. In war days, without sugar, honey was one sweet generally available and many used it in volume. After war was over, honey prices remained high and, with sugar easy to get, many quit honey. The memory of it sank deeply, however, and a demand arose to satisfy the desire for honey in a different form than extracted.

The question is whether there will be a repetition of the same dismal period through which extracted honey recently went when, with the

high price asked, honey was handed to the consumer in almost any old container and in most any condition and flavor. Lack of good market practice did as much to bring disfavor to extracted honey as did free sugar. During the depression days following the first so-called World War, comb honey was turned out rapidly because extracted honey sold then, at the bottom of things, as low as 25 to 30 cents for a five-pound pail. But comb honey hit a low also, two sections retailing for a quarter. Such comb honey! Much of it was light weight, thin, discolored; the wood dirty and stained. So comb honey did not stay long in favor either. It was a bad time. Bulk comb honey found its way into all sorts and sizes of containers. Even today it is seldom one sees a top quality bulk comb pack. Will we repeat this history?

This much may be said without fear or favor. It is seldom that a beekeeper develops the skill required to produce top quality comb or bulk comb honey. The few beekeepers who do succeed have found that, come what may, their market is just about as even as can be one year with another. Not that price and profit or flow are always the same, but the demand remains.

This pollination proposition is a toughy. Here where red clover for seed is the main legume in which the majority of farmers are interested, about as far as the beekeeper gets is to be provided with a free location. By what necromancy can a farmer expect our normal fifty-colony yards to increase seed on thirty to fifty acres of red clover? When the farmer finds that for thirty acres of red clover, he must clip for hay so the second bloom comes when there is little other bloom compe-

tition, that insects must be controlled, that soil should have a good lime and phosphate content, that bees must be concentrated so that when placed in a cordon around the thirty acres there will be about 100 bumping strong colonies, he begins to get the coldest feet in the world. The best we can do so far on red clover is to average about 3 to 4 bushels where the farmer used to get one. If he gives us half the seed above the average for former years, often we get a bushel per acre which isn't bad returns at all for the bees brought in. If it falls below that it soon brings less than the cost of the venture.

With fruit in early spring, here in Illinois orchards, few want to pay for bees unless they have been getting poor sets. It is a gamble too because of weather. When the fruit men do pay they seldom go much above the cost of bringing in the bees and caring for them, scattering them, taking them out before spray. If the orchard being serviced is where other orchards surround it, often spray losses are serious in spite of the agreement of the grower being serviced to protect the bees before heavy spraying starts. Yes, pollination is a gamble. But we must solve it to the satisfaction of both parties because it's coming sure as can be.

Been tasting different packs of creamed honey. What a variation! Some are coarse crystals; some creamy smooth. Some stand up well at room temperature; some become semiliquid. Some are made from the finest of choice honey, some are a dumping ground for off grades. Too bad. Creamed honey in some markets sells well but it will continue to sell well only when the quality is tops. Why are we always looking for a chance to dispose of inferior honey under disguise?



The Federation

C. G. Langley, a member of the Executive Committee of the Federation, and R. A. Grout, president, were in Washington the first week in May to determine what was holding up the price support program, what the Department of Agriculture was planning to do about increasing plantings and production of legumes, and many other matters relating to the beekeeping industry.

The decision on the price support regulation still is being held up pending Senate action on the bill to provide additional loaning power to the Commodity Credit Corporation. The Senate at present is debating a motion to take up the fair employment practice act—a highly controversial measure involving racial problems which southern representatives will filibuster and which is predicted will not pass. It can only be assumed that it will be several weeks before the Senate will dispose of this matter and take up the C. C. C. bill.

There is no reason to doubt that price support will come when this measure is passed. The matter has been presented to the Commodity Credit Corp. and it is believed that a decision will follow quickly any action by the Senate approving the increased loaning power. Honey is one of more than fifty commodities caught in this log jam of events and there is absolutely nothing that can be done to expedite or to implement the matter. Senators are critical of the Secretary of Agriculture for his refusal to put into effect these programs, which may be a reason for their not acting on the measure before this time.

The Soil Conservation Service is very much concerned about supplies of legume seeds to carry on its programs of conservation, and is issuing a leaflet on pollination for distribution in the eight states which comprise the midwest region. This leaflet is similar to one which they have been using in the Southwest to encourage the use of bees in legume seed production. The Agricultural Conservation Program Branch, Production and Marketing Administration, although fully aware of the shortage of legume seeds, currently is planning a program for paying

farmers for row planting some of the scarce seeds, none of which are commercial in aspect, but does not plan to have a program which would make payments to growers of producing legume seeds rather than cutting the crop of hay. The Department of Agriculture, therefore, is depending primarily on its price support program for 32 kinds of grass and legume seeds to encourage increased production. In view of acreage controls being placed on some of the cash crops, the industry can expect increased plantings of legumes and more acres left for harvesting of seed. This should add up to improved bee pasture in many areas.

Top officials of the Department of Agriculture currently are meeting to prepare plans and consider recommendations for their over-all program of retiring more than 28 million acres to grasses and legumes. Jas. I. Hambleton informed us that he will present a proposal asking that payments be made to growers of legume seeds when honey bees are used to cross-pollinate the crop.

The need for a better and more frequent reporting of the price of honey was brought to the attention of the Bureau of Agricultural Economics, which was requested to make a quarterly reporting to the industry. This was thought advisable in view of the coming price support program.

It has been brought to our attention that Holland, which formerly was our primary outlet for buckwheat honey, was using U. S. dollars to buy sugar which was inverted and concocted into an imitation honey. Officials of the Economic Cooperation Administration were contacted about this inasmuch as there is approximately 1½ million pounds of buckwheat honey still in the hands of merchants in this country. These officials agreed to transmit to E. C. A. in Holland a letter from the industry and also one from the Department of Agriculture. This letter was written and presented to officials during the week in an attempt to move the surplus of buckwheat honey under the recently announced subsidy program.

The Extension Service was contacted relative to establishing a

national extension apiarist in Washington who could disseminate information on bees, honey and pollination down through the states to the county agents throughout the country. Mr. Wilson, Director of Extension, was interested in such a move and a letter is being submitted to him and to the Secretary of Agriculture making a formal request.

A part of one day was spent visiting Jas. I. Hambleton, Chief of the Division of Bee Culture, and others at Beltsville, Maryland. One outcome of this meeting was a suggestion that the Division of Bee Culture publish on a subscription basis a quarterly report of the activities of its various laboratories. Mr. Avery S. Hoyt, Chief of the Bureau of Entomology and Plant Quarantine, was subsequently contacted about this and the matter now is under consideration. It was hoped that such a publication would result in the distribution of important and timely information to the beekeeping industry.

During the week, the Food Distribution Branch, P. M. A., which distributes honey in the school lunch and institutional feeding programs, was contacted to encourage its continued interest in honey because of the excellent educational opportunity. In this program many thousands of children are given the treat of tasting honey for the first time. This Branch was also urged to use honey in creamed form as a spread and at present is investigating the matter.

Several contacts were made with officials of the Department relative to a study on honey marketing. Mr. Alfred Stefferud, editor of *The Yearbook of the Department of Agriculture*, was contacted relative to issuing a yearbook on the subject of pollination. The attention of officials was called to the need for a movie on the subject of pollination for use in our educational program.

The many projects discussed and started and the contacts made with some 30 different officials and representatives in Congress combined to make this Washington trip valuable to the entire bee and honey industry.



American Honey Institute

In Memoriam

The American Honey Institute mourns the passing of one of the members of its board of directors—Mr. M. S. Stone. The inspiring presence and the constructive advice of Mr. Stone will be greatly missed. His loss to the Institute and the honey industry will be an everlasting one.

May your happy honeymoon
Stay with you from June to June;
May you fly on fairy trips.
Honey ever on your lips;
May your larder always be
Stored with jars of pure honey
While your guests enjoy as treat—
Nature's purest golden sweet.

This is the toast to the bride that Mrs. Grace, director of the American Honey Institute once wrote, and how appropriate it is this June! This is the month when beekeepers can do something special for the bride that may obtain her as a permanent customer in the years to come.

Giving some honey to the bride is a custom that goes back hundreds of years. In India a mixture of honey and milk, or equal parts of curds, honey and clarified butter was a respectful offering to a guest, or to a bridegroom on his arrival at the door of the bride's father.

A prospective bridegroom in Galla Land near Abyssinia had to offer his loved one a certain amount of honey before the wedding. If his offer was not large enough to suit the whims of the girl's parents, the wedding was called off.

Honey was considered so valuable in Egypt that the wedding ceremony itself demanded that the young man pledge a certain amount of honey to the bride. This token of his affections had to be paid every year.

The Hindus prized honey because they believed that it chased away evil spirits. Consequently part of the marriage rites was an appointment of the bride with honey.

Today, let's revive the old custom of giving honey to the bride! You can suggest to each of your customers that a pound jar of honey accompanied with a regular gift makes an excellent combination to give a bride.

And how about offering a free jar of honey to the bride, herself? You

might keep a list of all the girls in your community who are engaged or about to be married, and send them a little postcard saying that they are entitled to one free jar of honey. The postcard might include the mention of one of the customs just discussed.

Or, you might send a card to the parents of the bride-to-be and the prospective bridegroom telling them about the custom of giving honey to the bride.

If you decide to give a small jar of honey — either an 8-ounce, 12-ounce, or 1-pound jar, it should be nicely wrapped. It need not be fancy or expensive. But a ribbon around the bottle, and perhaps, a little bow will give a feeling of festivity at a very slight extra cost.

Or, you might decide to give honey in a dispenser. Once you decide to give a gift—push your promotion! You'll find that it will pay you big dividends in good will and future sales.

And here's another way to promote honey. Take it along to a pot luck supper or a church supper. Or take along some prize cookies or cake made with honey . . . for instance, honey date bars, Cherry Nut Loaf Cake, or Quick Honey Spice Cake.

You can also bring a little leaflet containing these recipes along. The American Honey Institute has just reprinted three of its most called-for leaflets. One of these is "Two New Favorite Honey Recipes" and contains the recipes for Cherry Nut Loaf Cake and Quick Honey Spice Cake. The cost per 100 is just 75 cents.

The other two pamphlets will be especially popular in many regions in the next few months because summer time is canning time. The leaflet called "Honey for Canning

and Preserving" cost \$1 for 100 copies.

The third reprint also makes a big summertime hit. It's "Jellies and Marmalades Made With Honey." In it is a description of the entire technique used to make jelly with honey, the jelly test, sealing and storage, and altitude adjustments that must be made to determine the boiling point of water. Of course, many recipes for marmalades and jellies are also included in this handy pamphlet. The cost is \$1 for 100 copies.

♦ ♦ ♦ ♦

One of the all-time favorites, the **Old Favorite Honey recipe book is going up in price.** This is important information for those of you who have run out of your old supply of **Old Favorites** and have been delaying in the purchase of a new supply. You can place orders now at the going rate—\$10 per 100 copies, and 10 cents each until July 1. After July 1, the price will be \$12 for 100 copies and 15 cents each. The Honey Institute has been forced to raise the price, because the costs of printing have gone up. The new price will be the lowest possible price that this book can sell for when the reprint comes through. Don't delay—order your supply today!

♦ ♦ ♦ ♦

Fair time will soon be here. Have you thought about it? Have you wondered about what kind of display you can have, and the possibilities of giving away something free to attract visitors?

Fairs are the ideal time to spread information about honey and how good it is. The first thing to do, of course, is to make your exhibit attractive so that people will like the way honey looks. But they'll never become steady customers unless they taste honey frequently. And you can be sure that they will when they have recipes from the Honey Institute.

Plan to give away some small leaflet free—or sell books such as the **Old or New Favorite Honey Recipes.**

Send for some of the leaflets or books **now.** You'll find an extensive list of them in the May issue of the **American Bee Journal.**



Condition of Bees

Universally, the season is one to three weeks behind normal. This means that the crops in the early producing territories have been delayed, and in the northern sections it means the bees are not nearly as far advanced as they usually are on the same date. However, only in the extreme northern sections has there been any heavy loss of bees.

The eastern provinces of Canada similarly report bees in below normal condition, and far behind in build-up.

Otherwise, we believe that normal conditions prevail except for some short reports from Oklahoma and Kansas where drought conditions prevail.

Honey Plants

New Jersey appears to be the only state which reports honey plants in poor condition. The balance of the northeastern states extending down the Atlantic Coast report honey plants are normal and above. Particularly down the east coast of Florida, the honey plants which got a very severe setback earlier, are coming forward with a vim, sometimes causing an overlap of flows which ordinarily have an intermission of several days between them.

There has been some heaving of clover in the central areas and in fact some clover fields have been plowed under as a consequence. For this reason, the conditions may be somewhat below normal in that area comprising northern Indiana, northern Illinois, southern Wisconsin and southern Minnesota and extending into Iowa. On the whole, however, honey plant conditions seem to be at least normal and in many cases above. The dry conditions in Nebraska, Kansas, Oklahoma, and extending into Colorado and Wyoming, are unfavorable but in the

Crop and Market

M. G. Dadant

intermountain sections late snows have apparently overcome the earlier doubt of sufficient water for irrigation during the summer months.

Plants are late and the weather is dry in Ontario and Quebec, and in Manitoba some several hundred square miles have been overflowed by the Red River and its tributaries.

Crop So Far

As stated previously, the crop is late. The orange flow in Texas was a disappointment, ranging from nothing to 50 pounds per colony. The Florida flow came late, but was good, and the California flow appears to have been near normal.

As we write this, the vetch flows are on in the Central South, and extending into Oklahoma and a little farther south the Dutch white clover appears excellent, and the mangrove and galberry in some places are giving extremely heavy flows, whereas an earlier stimulative flow from ti-ti it was an extreme disappointment. Reports from Texas and parts of Oklahoma indicate the vetch flow is all that could be desired and holly also has yielded well in Arkansas.

Farther north, the dandelion and fruit bloom has somewhat offset the earlier bad start.

Prospects

Prospects appear to be normal throughout the eastern sections and extending down the coast as far as Florida with some reports of too dry weather in Florida and across into Alabama and Mississippi. Louisiana looks favorable and Hubam is coming on extremely rapidly in Texas. With favorable weather, there should be a great possibility of a crop. Maryland and Virginia are hoping this year for a combination of a good clover and a good sourwood flow.

Conditions can hardly be said to be normal in the northern areas, and in Montana and extending into Wyoming. However, most of the intermountain territory is at least normal with Idaho being a question mark.

due to late freezes and unfavorable conditions.

On the west coast, conditions are about normal, although California is somewhat short of rain.

In Canada, the western provinces apparently are favorable except for the floods in Manitoba. On the other hand, drought conditions appear not too far removed in the eastern provinces.

Pollination

Except for the Central West and extending down into the Oklahoma, Arkansas, Texas, and Louisiana territory, we do not hear too much of pollination. An exception must be made of California, Oregon and Washington where they are undoubtedly ahead of any other section.

In most sections, however, pollination is hooked up largely with fruit bloom, and very little is said of pollination of the legumes and vegetables which are getting a "play" in the heavier producing areas of the Midwest.

Most of our reporters state that pollination is an issue but farmers are not yet ready to discuss cash payments.

Basis for Pollination

In most cases, cash payments are the basis, and this is especially true of the fruits and the vegetables where no other terms probably could be arranged. From reports, fruit rental runs from \$2.50 a colony as a low to some \$7.00 as a high.

Where bees are wanted for legume pollination, we have a varying condition. Beekeepers are perfectly willing to go into these sections for the honey they can get and this applies particularly to the Southwest with vetch on the black land, and with Hubam clover.

With red clover, of course, it will be foolish for a beekeeper to take a chance on depending on the honey, and in such cases either a cash or share rental is discussed, the same applying pretty largely to alsike. The cash rental averages around \$5.00 and \$6.00 per colony, and the share basis one-half the seed crop over the usual average for the state, which runs from three-fourths to one bushel for red clover.

Honey Wanted— Cars and less than car. TOP PRICES
C. W. AEPPLER CO., OCONOMOWOC, WIS.



It was in 1938 that we first learned of the everblooming black locust which is reported as an important source of nectar in some parts of eastern Germany. It was several years before we could get grafts from a tree in the Royal Botanic Garden. Now at last we have secured two more small trees from Europe which have been planted in the test garden to determine whether there is any difference from those we already have. We hope to give this variety a thorough test to determine its value for honey. If it proves as good here as reports from Europe indicate, it should add substantially to the bee pasture where planted extensively.

Frank A. Robinson, bee pasture specialist with the Florida Experiment Station, reports a check of the south Florida area to discover if possible the source of the report of honey from elderberry. He made 15 to 20 stops in an effort to find bees working on elderberry along the Miami Canal. He found only one bee on the flowers and she was gathering pollen. This agrees with my experience in Iowa where I have found the bees gathering only pollen from this source. It looks like the report of surplus from elderberries was either a mistake in checking the source or was an unusual event.

From J. H. Davis, inspector of apiaries for Arkansas, comes a report of surplus honey from soybeans in the apiary of Vaughn Wilson, of Bethesda. Investigation indicated that only certain varieties were yielding, but Mr. Davis was unable to determine whether it was the variety, or some special soil or environmental condition which was re-

The Postscript

Frank C. Pellett

sponsible for the yield. From only a few places do we hear of honey from soybeans and it seems highly important to get all possible information as to variety, soil, and weather conditions. It may be possible to increase nectar yield by selection of special strains or by planting on the right soils. We hope that every reader who learns of honey from soys will get all possible information as to variety, soil, type, and so forth.

Rattan vine is an important source of honey in the lowlands of eastern Texas and many other southern localities. The honey fails to find favor in northern markets because of its dark color and is reported as finding a market principally for baking or manufacturing purposes.

A sample of the honey sent to me by the L. A. M. Bernettes, of Bellaire, Texas, proved of much better flavor than I expected. It is very dark in color and those who expect to find good flavor only with light color would be prejudiced against it. The Bernettes are to be commended for their effort to find customers who like honey from such wild plants. Hot cakes and rattan honey provide a very good breakfast.

Heavy winter killing of so-called hardy plants is reported west of the Mississippi River because of the cold and dry weather during January. The dry weather continued into a late and backward spring and many a gardener will be disappointed in the failure of the perennials he had expected to bloom this summer. From Nebraska we hear that established shrubs were also killed in some neighborhoods. Fortunately sweet clover, the principal source of honey in that region, is very drought resistant.

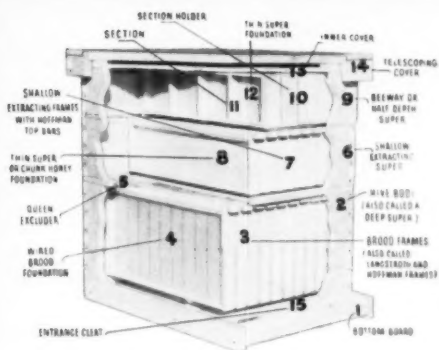
There is a growing interest in Wagner pea. New plants are slow to find favor and Wagner pea will make little progress from year to

year because of the time it takes to get it established. It resembles kudzu in that respect and also in the fact that once established it is more permanent than most legumes. The plant roots deeply and is little affected by ordinary drought. It yields an enormous amount of forage and the bees apparently get heavy loads of nectar when the flowers are open. Thus far it is grown most extensively in the state of Washington where it is the only plant sufficiently aggressive to compete with ferns on logged off land.

From western Nebraska comes an account of a windbreak north and east of the apiary, composed of a row of multiflora rose and inside that sand cherry, choke cherry, wild plum and Nanking cherry. Thus the family will have fruit while the bees have pasture as well as wind protection. To that I would suggest adding another row of caragana and tartarian honeysuckle planted alternately. The honeysuckle is spreading in habit while the caragana is upright, making a fine combination. Both flower freely and make fine bee pasture. They are hardy far to the north and west.

Dene Eaves, of Newton, Kansas, comes up with a slogan that is very different from the ones commonly suggested. She proposes, "Methuselah Ate Honey." If only the public could be convinced that that gentleman owed his long life to the eating of honey a greatly improved demand could be expected.

A letter from Vienna, Austria, tells of the death of Edward Kellner, a very helpful long-time correspondent for the test garden. Prior to the World War Mr. Kellner sent seeds of many-cut-sainfoin and other forage plants from an experiment station in Czechoslovakia, which added much to the interest of our project. Like many others he lost his property and became displaced by the war.



We Make It All

Bee Hives
Frames
Supers
Covers and Bottoms
Other Wooden Goods
Wired Foundation
(With and without hooks)
Plain Foundation

Super Foundation
Extractors
Tanks
Double Boilers
Capping Melters
6 Types of Bee Veils
Bee Gloves
Aprons

Our 64-page catalogue is nearly twice as large as any competitors and lists many items not found in any other bee supply catalogue. Our catalogue prices are substantially lower because we sell direct to you beekeepers. The picture above is from the front page of our 1950 catalogue and shows you how we make it easy for the beginner. Write for your free copy of our catalogue today and see how easy it is to order from it and how we save you 25% and more.

The Walter T. Kelley Co. Box 210 Paducah, Ky.

May We Suggest

THAT YOU USE THE MOST PRACTICAL AND PROVEN METHOD OF PRODUCING, AND MERCHANDISING COMB HONEY—BY USING OUR HONEY SECTIONS.

We manufacture and sell direct to the beekeeper all the items contained in the section super.

YOU WILL NOT PAY HIGH PRICES FOR YOUR SECTIONS IF YOU BUY THEM FROM US. WRITE FOR OUR NEW PRICE LIST WHICH INCLUDES ALL THE ITEMS NEEDED TO OPERATE A SUCCESSFUL APIARY.

HONEY SECTIONS

You can buy a package of 100, or a carload

MARSHFIELD MFG. CO.

(INC.)

MARSHFIELD, WISCONSIN

(The heart of Wisconsin's Dairyland)

MANUFACTURERS AND RETAILERS



JENSEN'S

PACKAGE BEES & QUEENS

"Magnolia State" Italians

You want QUALITY bees and queens or you want none at all.

You want SERVICE when you place an order—No waiting when you shoot your order to Jensen's.

Specializing in queen-rearing since 1915, we know how to produce the best, and nothing less goes here.

You want results in the hives, and our bees and queens will take care of that, if you have the bee pasture.

	2-lb. Pkgs.		3-lb. Pkgs.	
	Queens	with Queens	Queen-less	with Queen-less
1-24	\$1.00	\$3.50	\$2.50	\$4.50
25-99	.90	3.25	2.35	4.25
100-up	.80	3.00	2.20	4.00



D. R. Hybrid Queens of Dadant Starline Stock. Daughters of instrumentally inseminated mothers, mated to drones of same stock, (different lines). Isolation location for best control of natural mating, assuring as nearly 100% purity of strain as is possible.

1-24, \$1.25; 25-99, \$1.15; 100-999, \$1.05;
1,000 up, 95 cents each.

JENSEN'S APIARIES

Macon, Mississippi



... for "QUALITY" is the Most
Important Feature in Bee Supplies

Root Guaranteed Quality Means:

- Clear, dried lumber
- Dependable Workmanship
- Parts that fit tightly
- Long years of service
- Complete satisfaction

In Other Words--

ROOT QUALITY MEANS YOU GET YOUR MONEY'S WORTH!

You take no chances when you buy Root Bee Supplies for if you do not believe Root goods are as represented after receiving your shipment you may return the goods at our expense and we will refund your money and the transportation charges you have paid.

VISIT YOUR NEAREST ROOT DEALER SOON

THE A. I. ROOT CO.

MEDINA, OHIO